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THE RELATIONSHIP BETWEEN THE HUMAN AND SOCIAL CAPITAL
CHARACTERISTICS OF NASCENT ENTREPRENEURS
AND EXPECTED JOB GROWTH IN
THE UNITED STATES

by

William Dwight Burge

A Dissertation
Submitted to the Graduate School
and the Department of Human Capital Development
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

THE RELATIONSHIP BETWEEN THE HUMAN AND SOCIAL CAPITAL
CHARACTERISTICS OF NASCENT ENTREPRENEURS
AND EXPECTED JOB GROWTH IN
THE UNITED STATES

by William Dwight Burge

May 2017

The global financial crisis (GFC) that began in 2007 negatively impacted new business creation (Davidsson & Gordon, 2015). Entrepreneurship has been identified as a viable way to generate jobs in the United States since the 1970s (U.S. Small Business Administration, 2014). However, the literature suggests that there has been a decline in entrepreneurship in the United States (Clifton, 2015; Singh & Ogbolu, 2015). Capital is important to those individuals involved in entrepreneurship (Cetindamar, Gupta, Karadeniz, & Egrican, 2012), specifically, human capital and the social network connections or social capital resources of the entrepreneur (Becker, 1993; Schutjens & Völker, 2010).

This study determined the relationship between demographic, human capital, and social capital characteristics of nascent entrepreneurs and expected job growth in the United States. Human capital and social capital theories formed the foundation for the researcher's conceptual framework for this study. The study proposed a model with five variables based on the literature to determine the relationship between demographic, human capital, and social capital characteristics of nascent entrepreneurs and expected job growth in the United States: age, gender, education level, knowing other

entrepreneurs, and previous business angel investing experience. If the relationships between the human and social capital characteristics and demonstrated job growth relative to becoming a successful entrepreneur are not properly identified, then policymakers and educators could struggle to design and build the training and education infrastructure to support entrepreneur development, generate jobs, and grow the economy.

Descriptive statistics, chi-square, and logistic regression analyses were used to analyze a census ($N = 387$) of nascent entrepreneur respondents participating in the 2011 Global Entrepreneurship Monitor (GEM) survey in the United States. The descriptive statistics found that the census of nascent entrepreneurs was predominantly male, ages 35-44 years, college-educated with a bachelor's degree or higher, and almost half that knew another entrepreneur. The logistic regression analysis of the GEM nascent entrepreneur data found that the age groups 35-44 and 65 and older significantly influenced expected job growth. Possible implications of this research include the development of more effective entrepreneurial training programs in the United States.

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LIST OF ABBREVIATIONS

TEA	Total Early-Stage Entrepreneurial Activity
GEM	Global Entrepreneurship Monitor
GDP	Gross Domestic Product
APS	Adult Population Survey
IRB	Institutional Review Board
VIF	Variance Inflation Factors
GFC	Global Financial Crisis
ISCED	International Standard Classification of Education

CHAPTER I - INTRODUCTION

External economic shocks affect the number of new companies formed in an economy (Davidsson & Gordon, 2015). The global financial crisis (GFC) is one example of an external economic shock that negatively impacts new business creation (Davidsson & Gordon, 2015). The Great Recession that followed the GFC in 2008 resulted in job loss on a global scale (Stiglitz, 2010). The loss of jobs, however, was just part of the problem. In 2008, approximately 6.1 million Americans were only working part-time due to their unsuccessful attempts to secure a full-time position (Stiglitz, 2010). However, by 2012, many countries around the world did not experience a recovery for new business development even at the same level prior to the GFC that began in 2007 (Klapper, Meunier, & Diniz, 2014). As a result, there is a need for studies that help advance the development of entrepreneurial programs designed as a means to spur job growth through entrepreneurship (Santiago-Roman, 2013).

The Global Entrepreneurship Monitor (GEM) report indicates the importance of entrepreneurship research, the increased interest of which is due partly to entrepreneurship's "potential for contributing to economic development" (Goel, Göktepe-Hultén, & Ram, 2015, p. 162). Another reason for the increased attention devoted to entrepreneurship research is the potential to increase employment from entrepreneurship (Goel et al., 2015). The literature suggests the potential to increase employment from entrepreneurship is important for job creation because small businesses have provided approximately two-thirds of the net new positions in the United States dating back to the 1970s (U.S. Small Business Administration, 2014). However, according to Singh and Ogbolu (2015), "There is growing and fairly strong empirical evidence that

entrepreneurship is on the decline in the United States” (p. 52). It has been suggested that entrepreneurship is on the decline in the United States in the literature by the negative net quantity of businesses created in the United States over the past 6 years (Clifton, 2015). This trend in entrepreneurship is alarming since approximately one in five positions created in the United States originates from business startups (Decker, Haltiwanger, Jarmin, & Miranda, 2014). A decreasing rate of entrepreneurship means there will likely be fewer ideas put into action to foster technological innovations and create new jobs (Singh & Ogbolu, 2015).

Perhaps, the decline in entrepreneurial activity in the United States is a reflection of economic struggles brought about by the Great Recession that started in 2008 (Singh & Ogbolu, 2015). However, employment numbers actually improved in the United States by 2010, but these numbers do not fully account for the over 6 million Americans shut out of the labor pool (Singh & Ogbolu, 2015). In order to help those who are unemployed in the United States, entrepreneurship is still a viable approach to mitigate unemployment problems and the growth of gross domestic product (GDP; Singh & Ogbolu, 2015).

To better address unemployment with entrepreneurship, the literature suggests various forms of capital are influential to individual engagement in new entrepreneurial activities (Cetindamar et al., 2012). These various forms of capital for individual entrepreneurial pursuits include both financial and human capital (Cetindamar et al., 2012). Additionally, social capital is valuable to entrepreneurs starting a new business (Schutjens & Völker, 2010).

Background of the Study

In this section, the researcher described the entrepreneur definition used in this study. The expected job growth variable is discussed in this section. The researcher also provided an overview of the human and social capital theories used as the theoretical basis for this study.

Entrepreneurship Definition

Active entrepreneurs are individuals taking the steps to set up a business and have an ownership interest in the business (Reynolds et al., 2005). The study of entrepreneurs involves individuals who are engaged in the activity of creating a new business, with the *entrepreneur* definition for this study describing a nascent entrepreneur as “an entrepreneur involved in setting up a business” (Reynolds et al., 2005, p. 209). More specifically, a *nascent entrepreneur* is defined as one who is “setting up a business, active in the past 12 months, owner or part-owner, and business not paid wages etc. last 3 months” (Ramos-Rodríguez, Medina-Garrido, & Ruiz-Navarro, 2012, p. 583). The *nascent entrepreneur* definition for this study is defined by the entrepreneurial activity criteria presented by Reynolds et al. (2005) and used by previous researchers to study entrepreneurial activity (Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013).

Expected Job Growth

Previous research by Santiago-Roman (2013) examined the expectation of increasing jobs through entrepreneurship based on data as reported in the GEM for a sample of Puerto Rican entrepreneurs. The expectation of increasing jobs calculation was derived from the difference in the number of employees employed today from the expected increase in the number of employees in 5 years as reported by survey responses

in the GEM (Santiago-Roman, 2013). The examination of individual characteristics potentially related to expected job growth is of importance to institutions with the goal of improving entrepreneurial development programs designed to grow the economy through entrepreneurship (Santiago-Roman, 2013).

Human Capital Theory

According to human capital theory, higher quality knowledge improves an individual's cognitive skills (Davidsson & Honig, 2003). Individual human capital is important to new entrepreneurs and investors based on its predictive value of business success (Unger, Rauch, Frese, & Rosenbusch, 2011). The definition of *human capital*, according to Becker (1993), includes individual knowledge and skills that create commercial value, which comes from general knowledge and skills or from specific individual skills (Becker, 1993). Individual capital acquired through training is one example of a specific type of human capital, while formal education represents a more general type of human capital (Becker, 1962). Human capital theory describes a formal college education as general human capital since it provides general knowledge and skills from a single field (Becker, 1993). Corporate training programs tend to be tailored to a company's particular operational processes and procedures (Becker, 1993).

Beyond the basic elements of human capital, other individual characteristics, including age and gender, must be considered in the overall study of entrepreneurs (Marvel, Davis, & Sproul, 2014). Some research suggests men are more likely to start a company and women are less likely to take on the risks associated with entrepreneurship (Lazear, 2005; Van der Zwan, Verheul, Thurik, & Grilo, 2012; Wagner, 2007). Age is also a factor to consider when analyzing entrepreneur activity (Lazear, 2005).

While age and gender may influence the decision to engage in entrepreneurship, individual human capital provides the foundation for entrepreneurs to identify successful business opportunities (Davidsson & Honig, 2003). According to Unger et al. (2011), a positive relationship exists between the ability to identify entrepreneurial opportunities and the individual human capital characteristics of age, gender, and education level. For example, the human capital characteristic of education not only helps with opportunity identification and positively relates to success as an entrepreneur (Davidsson & Honig, 2003; Rocha, Carneiro, & Varum, 2015; Unger et al., 2011). In addition to the human capital characteristics of the entrepreneur, the entrepreneur's social connections play a part in successful entrepreneurial activity.

Social Capital Theory

Social capital is defined as resources that come from one's social or relationship networks (Gedajlovic, Honig, Moore, Payne, & Wright, 2013). Examples of social capital include relationships with family, professional club memberships, or civic organization memberships (Poon, Thai, & Naybor, 2012). Entrepreneurs' social network connections provide the social resources to mobilize the financial or intellectual resources needed to identify and exploit rapidly changing business opportunities with the help of social capital (Hmieleski & Carr, 2008; Stam, Arzlanian, & Elfring, 2014). Social capital literature suggests that individual social network connections help entrepreneurs reduce the search costs of locating suppliers and customers (Chuluunbaatar, Ottavia, & Kung, 2011). While making social connections is one way to build social capital, making investments in a business is another way to build relationships with entrepreneurs.

Of particular interest to entrepreneurial social capital is the business angel within an entrepreneur's relationship network who provides personal funds to help an entrepreneur start a business (Ramos-Rodríguez et al., 2012). Anecdotally, many times the business angel has already become a successful entrepreneur and operates within a network of like-minded individuals who share similar human and social capital characteristics. A study of entrepreneurship by Ramos-Rodríguez et al. (2012) found a significant relationship between being a successful entrepreneur, knowing other business owners, and having previous investment experience from angel investing. While research supports the influence of human and social capital on entrepreneurship, closer assessments of this relationship can help shape economic policies that help create jobs through entrepreneurship (Unger et al., 2011; Westlund, Larsson, & Olsson, 2014).

The researcher chose this global entrepreneur data for analysis since it captures individual level data on demographic, human capital, and social capital characteristics of nascent entrepreneurs along with the expectation of job growth in five years for new companies (Santiago-Roman, 2013). The study of entrepreneurs in the United States is important since approximately two-thirds of the net new jobs in the United States are created by small businesses (U.S. Small Business Administration, 2014). The decline in entrepreneurship in the United States documented in the literature also suggests the importance of conducting entrepreneurial studies (Singh & Ogbolu, 2015). Previous studies isolated the area of entrepreneurship geographically to study countries outside the United States or only focused on entrepreneurship in specific industries (Nishimura & Tristán, 2011; Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013). Research conducted by Santiago-Roman (2013) examined the relationship of demographic and

business characteristics of entrepreneurs with job growth but did not include social capital characteristics in the analysis.

Statement of the Problem

Age, gender, and education have been identified as indicators for nascent entrepreneurship (Arenius & Minniti, 2005; Kautonen, Down, & Minniti, 2014; Lazear, 2005; Neira, Portela, Cancelo, & Calvo, 2013; Rocha et al., 2015; Tinuke, 2013; Van der Zwan, Verheul, Thurik, & Grilo, 2013). Rocha et al. (2015) found that most nascent entrepreneurs are in their 30s, Kautonen et al. (2014) found entrepreneurial activity increases into the late 40s and then decreases thereafter, and Brixy, Sternberg, and Stüber, (2012) found entrepreneurs are likely to be less than 45 years of age. Gender is also an indicator of entrepreneurship with men more likely to engage in entrepreneurial activity (Lazear, 2005; Rocha et al., 2015; Tinuke, 2013; Van der Zwan et al., 2012). Further findings in the literature suggests the importance of gender as a characteristic of entrepreneurs since more women entrepreneurs become entrepreneurs (Ramos-Rodríguez et al., 2012).

In addition to age and gender, individual human capital obtained through formal education is important to becoming an entrepreneur since education can aid in the transference of cognitive skills that ultimately determine successful strategies of the business (Kungwansupaphan & Siengthai, 2014; Lofstrom, Bates, & Parker, 2014). Research suggests that higher levels of education did not necessarily have an impact on startup activity (Ramos-Rodríguez et al., 2012). Given the results on human capital through formal education, the examination of an individual's predisposition to start a

business must include, in addition to human capital characteristics, social capital characteristics in the analysis (Ramos-Rodríguez et al., 2012).

Social capital positively influences entrepreneurs by (a) providing social connections to mobilize resources and valuable relationships with experienced entrepreneurs and (b) reducing the uncertainties of entrepreneurship (Arenius & Minniti, 2005; Kim & Kang, 2014; Ramos-Rodríguez et al., 2012; Stam et al., 2014). Ramos-Rodríguez et al. (2012) suggest a significant relationship between having network connections with experienced entrepreneurs, angel investing experience, and entrepreneurial actions. Social connections help individuals build social capital with experienced entrepreneurs who are excellent role models to follow, thereby helping to minimize some of the uncertainty of a new business venture (Arenius & Minniti, 2005).

Healthy economies depend on business growth and development. Previous research demonstrates the relationship between demographic and business characteristics and expected job growth in specific economies (Santiago-Roman, 2013). Businesses created through entrepreneurship can have a positive impact on employment (Ramos-Rodríguez et al., 2012). Entrepreneurship's viability as a job growth mechanism is rooted in the innovations and potential new markets for goods and services created by the entrepreneur. Further evidence of entrepreneurship as a job-generating mechanism in the United States indicates that approximately 20% of the positions created are through entrepreneurial efforts (Decker et al., 2014; Goel et al., 2015; Shane, 2004; Singh & Ogbolu, 2015). The potential boost for future job creation and the potential positive impact from entrepreneurship, however, is in jeopardy as the decline in net new

businesses in the United States from the previous six years raises questions about future job creation through entrepreneurship (Clifton, 2015).

To support business growth and development derived from entrepreneurial activity, individuals need training opportunities that develop the skills to become an entrepreneur and encouragement in the development of social capital (Ramos-Rodríguez et al., 2012). Without a research-based framework that analyzes the relationship between entrepreneurship and expected job growth in the United States by including social capital characteristics in the analysis (Ramos-Rodríguez et al., 2012), potential entrepreneurs will lack the required and appropriate training and education that can foster entrepreneurial success. If the relationships between the human and social capital characteristics and demonstrated job growth relative to becoming a successful entrepreneur are not properly identified, then policymakers and educators could struggle to design and build the training and education infrastructure to support entrepreneur development, generate jobs, and grow the economy.

Purpose Statement

The purpose of this study was to determine the relationship between the demographic characteristics of age and gender, the human capital characteristic of education level, and the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor that exist with nascent entrepreneurs and expected job growth in the United States. More specifically, this study determined the relationship by including the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor in the analysis.

Research Objectives

For purposes of this research study, the research objectives were as follows:

- RO1: Describe the demographic characteristics of the sample in terms of age, gender, the human capital characteristic of education level, the social capital characteristics of knowing other entrepreneurs, and being a previous business angel investor as reported in the GEM.
- RO2: Determine the relationship between the demographic characteristic of age of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO3: Determine the relationship between the demographic characteristic of gender of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO4: Determine the relationship between the human capital characteristic of education level of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO5: Determine the relationship between the social capital characteristic of knowing other entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO6: Determine the relationship between the social capital characteristic of being a previous business angel investor and expected job growth in the United States as reported in the GEM.
- RO7: Determine the influence of the demographic characteristics of age and gender, the human capital characteristic of education level, the social

capital characteristics of knowing other entrepreneurs, and being a previous business angel investor on expected job growth as reported in the GEM.

Theory and Conceptual Framework

The researcher's conceptual framework for this study included the variables of age, gender, education level, knowing other entrepreneurs, and previous business angel investing experience. Human and social capital theories provided the theoretical basis for measurement of these variables. The first research objective was to determine the demographics of the sample of nascent entrepreneurs in the United States as reported in the GEM. The second and third research objectives determined the relationship between the demographic variables of age and gender and expected job growth in the United States as reported in the GEM. The fourth research objective determined the relationship between the human capital variable of education level and expected job growth in the United States as reported in the GEM. The fifth and sixth research objectives determined the relationship between the social capital variables of knowing other entrepreneurs and being a previous business angel investor and expected job growth in the United States as reported in the GEM. The seventh research objective determined the influence that the demographic, human capital and social capital characteristics have on expected job growth in the United States as reported in the GEM.

Human capital, according to Becker (1962), includes knowledge gained by completing a formal education, which is important to assemble the expertise to start a business (Becker, 1962, 1993; Marvel et al., 2014). The relationship between human capital, as measured by years of schooling, and entrepreneurship was positive (Davidsson

& Honig, 2003). However, those with primary and secondary levels were more likely to become entrepreneurs than individuals with higher levels of education (Livanos, 2009). Human capital characteristics examined in the entrepreneurship literature included education and the demographic characteristics of age and gender (Rocha et al., 2015). However, the conceptual framework for this study illustrated demographic, human capital, and social capital characteristics.

The social capital theory proposed social capital derived from social network resources that can be converted into other types of capital such as financial capital (Felício, Couto, & Caiado, 2012; Gedajlovic et al., 2013; Li, Wang, Huang, & Bai, 2013). According to Cope, Jack, and Rose (2007), the social capital theory proposes social networks of the entrepreneur can offer valuable resources in the form of business know-how. The existence of social capital built through network relationships, or a lack thereof, is an important factor in the choice to take entrepreneurial action (Davidsson & Honig, 2003; Ramos-Rodríguez et al., 2012). In order to explore the social capital construct, the researcher examined social capital from individual relationships with other entrepreneurs and previous experience as a business angel investor (Ramos-Rodríguez et al., 2012). To examine the relationship between individual human and social capital with expected job growth, the researcher addressed entrepreneurship at the nascent entrepreneur stage.

Nascent entrepreneurs are individuals beginning the entrepreneurial process (Ramos-Rodríguez et al., 2012). According to Ramos-Rodríguez et al. (2012), "Total-Early-Stage Entrepreneurial Activity is defined as nascent entrepreneur involved in setting up a business and owner-manager of a firm less than 3 1/2 years old" (p. 583).

The researcher adapted the conceptual model for this study from previous entrepreneurship studies based on human capital and social capital theories (Becker, 1993; Gedajlovic et al., 2013; Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013). Figure 1 illustrates the conceptual model for this study.

Significance of the Study

This research is relevant to both policymakers and educators who desire to learn more about the individual characteristics of nascent entrepreneurs as they relate to job growth. A more in-depth understanding of individual nascent entrepreneur characteristics can help with the design of training programs that will increase opportunities in the United States through entrepreneurship. Specifically, this study examined the relationship that individual demographic, human capital, and social capital characteristics of nascent entrepreneurs have on expected job growth in the United States.

Delimitations and Assumptions

Several delimitations were identified for this study. According to Roberts (2010), the delimitations of a study are within the researcher's control. The delimitations of this research study included an examination of the demographic, human capital, and social capital characteristics of nascent entrepreneurs that have a relationship with expected job growth in the United States. The researcher did not examine the psychological or cognitive factors of nascent entrepreneurs that have a relationship with expected job growth in the United States. The study did not examine: the type of business opportunity, the motive for starting a business (opportunity vs. necessity), the business sector in which the entrepreneur choose to start the business, startup costs, or business experience

(Santiago-Roman, 2013). The researcher also did not examine the relationship between entrepreneurship and regional economic growth (Santiago-Roman, 2013).

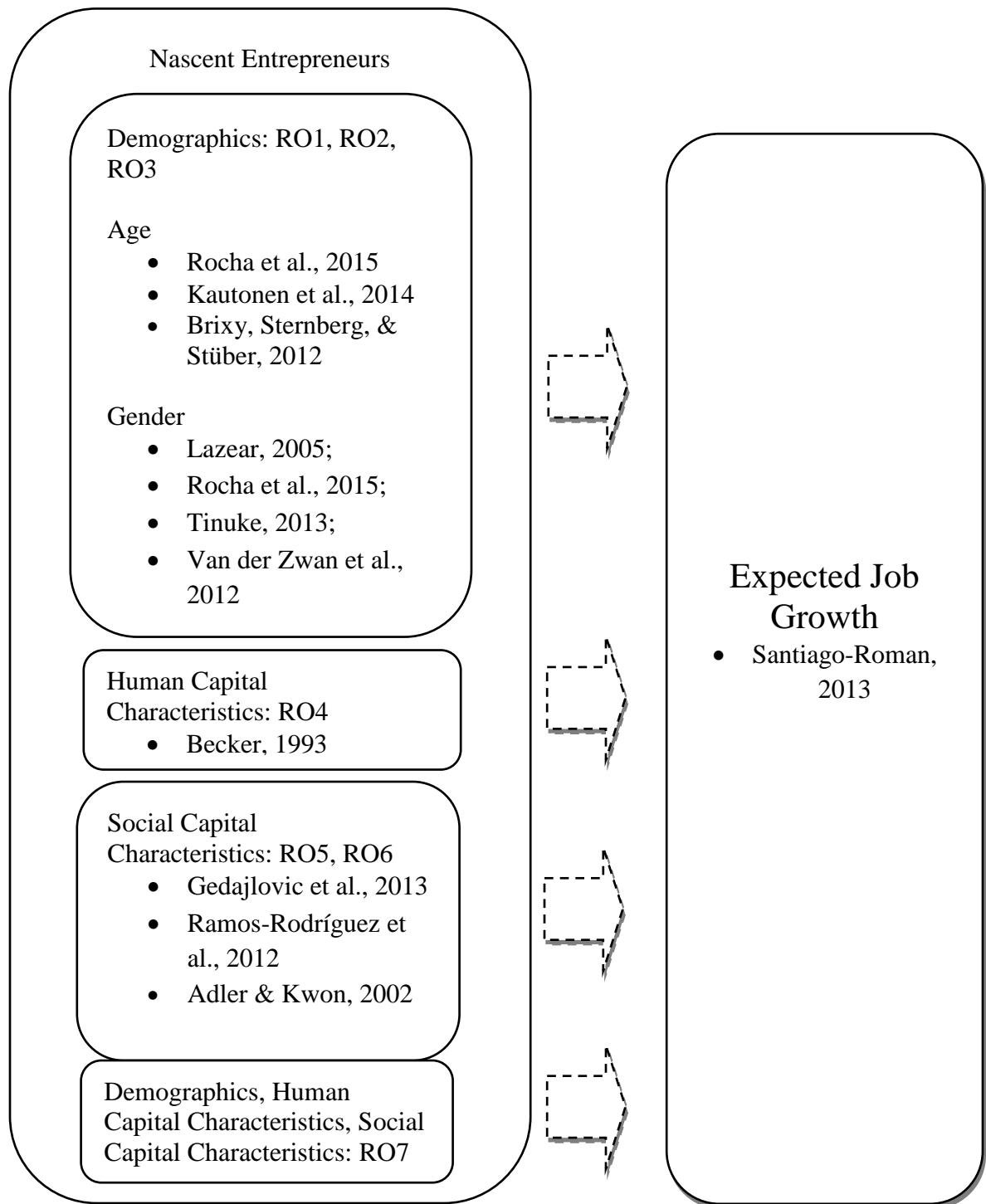


Figure 1. Entrepreneurship conceptual model.

The measurement of the demographic characteristics of the sample of nascent entrepreneurs was limited to age and gender. The measurement of the human capital characteristics of the sample of nascent entrepreneurs was limited to education level. Social capital characteristic measurements were limited to previous entrepreneur relationships and previous business angel investing experience. This study was limited to data on entrepreneurs from the GEM APS 2011 dataset. More specifically, data examined in this study were limited to a sample that only included nascent entrepreneurs from the United States GEM APS 2011 dataset. The entrepreneur definition was limited to nascent entrepreneurs.

Definition of Key Terms

Certain key terms were mentioned throughout the study. These key terms were important for an analysis of the research objectives. The definitions for human and social capital that were used in this study are defined in this section. Two definitions of *entrepreneurship* are also defined for the study.

1. *Human Capital* – A collection of one's knowledge, skills, and abilities (Becker, 1993).
2. *Social Capital* – Capital from one's social or relationship networks (Gedajlovic et al., 2013).
3. *Nascent Entrepreneur* – “setting up a business, active in the past 12 months, owner or part-owner, and business not paid wages etc. last 3 months” (Ramos-Rodríguez et al., 2012, p. 583).
4. *Business Angel* – Individual that provided personal funds in the past three years to help someone start a business (Ramos-Rodríguez et al., 2012).

5. *Total Early-Stage Entrepreneurial Activity* – “Nascent entrepreneur involved in setting up a business and owner-manager of a firm less than 3 1/2 years old” (Ramos-Rodríguez et al., 2012, p. 583).
6. *Entrepreneurship* – “Any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, team of individuals, or an established business” (Bosma, Coduras, Litovsky, & Seaman, 2012, p. 20).

Summary

One way to create jobs in the United States is through entrepreneurship.

Entrepreneurs possess a unique set of knowledge, skills, and abilities and develop social relationships that enable them to access human capital resources. The recent entrepreneurship literature examined the relationship of demographic, human capital, and social capital characteristics with entrepreneurship and job growth. However, the recent literature suggests the addition of social capital characteristics to better examine the relationship with entrepreneurship (Ramos-Rodríguez et al., 2012). Therefore, this study fills a gap in the literature by examining the relationship of nascent entrepreneur demographic, human capital, and social capital characteristics and expected job growth in the United States.

Chapter II reviews the literature on individual demographic, human capital, and social capital characteristics. Chapter II examines the relevant literature on entrepreneurship and how it related to this research study. Chapter III reviews the research methods of this study. Chapter IV contains the analysis of the nascent

entrepreneur data for the study. Chapter V provides a summary that includes the findings, conclusions, and recommendations.

CHAPTER II – REVIEW OF RELATED LITERATURE

A longstanding belief is the importance of entrepreneurship for economic growth (Hafer, 2013). In fact, entrepreneurship is important for economic development for countries around the world since it is instrumental in boosting and creating growth (Arin, Huang, Minniti, Nandialath, & Reich, 2015; Cetindamar et al., 2012). Additionally, business research has recognized the importance of entrepreneurship for wealth creation. A deeper investigation of entrepreneurship might offer a more accurate assessment of the environment to support policymakers in the uses of their governmental and monetary powers (Estrin, Mickiewicz, & Stephan, 2013; Valdez & Richardson, 2013).

As policymakers discuss possible sources of economic development, entrepreneurship is a viable option to generate new jobs since it drives technological change, is a source of innovation, and is linked to business competitive advantage (De Carolis, & Saporito, 2006; Elfenbein, Hamilton, & Zenger, 2010; Ryota & Kazuyuki, 2013). Additionally, entrepreneurship is critical to maintain business competitive advantage for firms because of globalization and changing technology (Hsiao, Hung, Chen, & Dong, 2013). Previous research that deals with entrepreneurship centers on the individual human capital of the entrepreneur, which is essential since prior knowledge and skills are important for intellectual performance (Davidsson & Honig, 2003; Stuetzer, Obschonka, & Schmitt-Rodermund, 2013). Entrepreneurial knowledge is either tacit meaning "the know-how" or explicit knowledge "the know-what" component (Davidsson & Honig, 2003, p. 306). However, human capital is only one part of entrepreneurship. It is often said that it is not necessarily what you know, but who you know that makes all the difference in a business setting. According to Kim and Kang (2014), trust built

through social capital accounts for entrepreneurship. The benefits derived from who one knows via their social network relations are called *social capital* (Adler & Kwon, 2002). Social capital benefits include goodwill along with access to different knowledge and skills from individuals in one's social network, examples of which are individual relationships with experienced managers and potential investors (Adler & Kwon, 2002; Mosey & Wright, 2007).

Legislators and scholars have interest in determining entrepreneurial rates in and among countries worldwide (Stenholm, Acs, & Wuebker, 2013). According to Stenholm et al. (2013), entrepreneurial activity differs across countries. However, a problem persists when explaining why this difference exists (Stenholm et al., 2013). Possible explanations for starting a business include out of the necessity to have an occupation or to exploit new opportunities, while another possible explanation is the opportunity cost of choosing a career in entrepreneurship over another line of work (McMullen, Bagby, & Palich, 2008).

The attractiveness of business opportunities that still exist in the marketplace today sometimes draws individuals into entrepreneurship (McMullen et al., 2008). Without individual action, recognition of an opportunity is by itself not enough (Stenholm et al., 2013). Therefore, new businesses do not appear by magic but are created by an entrepreneur from a sequence of actions (Bergmann & Stephan, 2013).

The literature review investigated the relationship between human and social capital characteristics and entrepreneurship. Definitions of human and social capital were provided from the previous literature, and its theories were reviewed in order to provide a theoretical basis for these entrepreneur characteristics. Previous studies on

entrepreneurship were explored in the literature. The existing literature on the human and social capital characteristics of entrepreneurship was reviewed for the background of this study.

Human Capital Theory

In this section the researcher examined human capital theory. Specifically, the researcher discussed general and specific human capital along with individual investments in human capital. The researcher also discussed the concept of opportunity recognition by entrepreneurs.

Financial and Physical Capital

In order to create a new business, entrepreneurs need capital from different sources to successfully get the business off the ground. Financial capital is one source of capital that includes money in individual bank accounts or shares of company stock, while capital categorized as physical capital includes manufacturing equipment for an assembly line or the entire plant where the manufacturing process takes place (Becker, 1993). Financial capital and physical capital are forms of capital as they produce income and outputs over a long period of time (Becker, 1993).

Human Capital

Different types of capital, such as human capital, are important to the entrepreneur when starting a business (Cetindamar et al., 2012). Investments in education or training are investments in the individual which produce a type of capital called human capital (Becker, 1993). The capital is considered human since an individual cannot be separated from their knowledge attained through these investments in education or training (Becker, 1993).

In fact, regardless of the variation or existence of the different types and amounts of capital, new businesses are started through a series of individual entrepreneur actions (Bergmann & Stephan, 2013). Individual entrepreneurs bring with them different knowledge and experience—knowledge that is both “tacit” and “explicit”—the importance of which plays a part in intellectual performance (Davidsson & Honig, 2003, p. 306). Therefore, the entrepreneur's ability to solve problems and make decisions results from an interaction of these two types of knowledge (Davidsson & Honig, 2003).

According to the human capital theory (with Gary Becker being considered the pioneer), human capital is the collection of one's knowledge, skills, and abilities that produce economic value (Becker, 1993). Knowledge and skills are human since they provide the entrepreneur with the individual capabilities to perform and create value (Cetindamar et al., 2012). In addition to the human aspect, human capital is considered a form of capital since it is built through investments that include out-of-pocket and opportunity costs (Cetindamar et al., 2012).

General Human Capital

Since the human capital theory is concerned with knowledge or skills that an individual can obtain by investing in on-the-job training programs or education, the human capital definition can be broken down further to include general human capital (Becker, 1962). For example, a college education provides general knowledge of one's field of study (Becker, 1993). Individual general knowledge, from years of education and work experience, is called general human capital since it is not specific to just one job (Becker, 1993). General human capital is important because it helps entrepreneurs run a

company successfully and is developed through formal education (Baptista, Karaöz, & Mendonca, 2014; Rauch & Rijsdijk, 2013).

Specific Human Capital

The second part of the human capital definition includes specific human capital. For example, corporate training programs that pertain to a particular company's processes, in contrast, provide more specific human capital (Becker, 1993). Entrepreneurs can develop specific human capital through previous industry or entrepreneurial experiences which provide the individual with the human capital to develop a new company but does not have a direct effect on new business emergence (Baptista et al., 2014; Dimov, 2010; Rauch & Rijsdijk, 2013). Specific human capital gained through industry experience which includes information about profitable business niches helps the entrepreneur learn ways to improve productivity and organization (Rauch & Rijsdijk, 2013). Previous management experience provides the entrepreneur experience specific to manage employees (Rauch & Rijsdijk, 2013).

The human capital of the founder of a business examined in the literature included entrepreneurship, industry, and university-specific components (Criaco, Minola, Migliorini, & Seraols-Tarrés, 2013). Criaco et al. (2013) examined the founder's specific human capital for a sample of university start-ups that focused on the impact of survival. The authors' findings suggested that university and entrepreneur human capital enhanced survival (Criaco et al., 2013).

Industry experience of the founder of the business is gained by actively participating in a particular industry (Santarelli & Tran, 2013). The specific human capital built through industry experience has been found to improve performance as an

entrepreneur by contributing entrepreneurial knowledge to the founder of the business (Santarelli & Tran, 2013). Additionally, Dimov (2010) found a direct relationship between industry experience and new business emergence. Santarelli and Tran (2013) mentioned that the age of the founder is an important consideration for human capital investments in education or industry experience since as one ages the returns from his or her investments to the business can decrease. Thus, human capital investment returns are a concern for older individuals that may have less time to earn a return on that investment (Becker, 1993).

Investments in Human Capital

One purpose of human capital theory is to help explain differences in financial returns of employees (Rauch & Rijsdijk, 2013). The human capital theory states that individuals will try to get compensated for making human capital investments and seek to maximize their returns on human capital investments over their lifetime (Becker, 1993). In the context of entrepreneurship, entrepreneurs that have high amounts of human capital need to obtain suitable returns for starting a new business venture (Becker, 1962; Rauch & Rijsdijk, 2013).

The entrepreneurship literature acknowledges that human capital is an important intangible resource, with it being described as the outcome of an investment in one's human capital (Kungwansupaphan & Siengthai, 2014). Furthermore, the capital component is composed of the entrepreneur's knowledge, skills and competency (Kungwansupaphan & Siengthai, 2014). Entrepreneurs utilize their human capital to determine the actions and strategies of the business (Kungwansupaphan & Siengthai, 2014).

Opportunity Recognition

There are millions of small companies that exist in the United States (U.S. Small Business Administration, 2014). So, how do aspiring entrepreneurs discover the next new business opportunity? *Opportunity* has been defined in the literature as "a potentially profitable but hitherto unexploited project" (Casson & Wadeson, 2007, p. 286).

Additionally, the literature suggests that the likelihood of just stumbling upon an opportunity is few and far between (Casson & Wadeson, 2007). Profitable opportunities do exist today. A discovery process is involved since few opportunities are identified by chance (Casson & Wadeson, 2007). The discovery of an opportunity is not free and involves the commitment of scarce resources, such as the entrepreneur's time or IT systems to research potential opportunities (Casson & Wadeson, 2007). The literature acknowledges unexploited opportunities are available for discovery but requires more resources, such as the entrepreneur's time, in order to identify these opportunities, with the easiest ones being discovered first with increased costs for additional discoveries (Casson & Wadeson, 2007).

Once the entrepreneur sinks time into a project, he or she is unable to recover this scarce resource if they choose not to pursue the opportunity (Casson & Wadeson, 2007). However, if it is just a matter of time, then everybody would potentially discover the same opportunities (Casson & Wadeson, 2007). Do the entrepreneur's knowledge, skills, and abilities matter for opportunity discovery? For example, individuals who have superior knowledge, skills, or abilities should have a higher probability of recognizing and seizing new entrepreneurial opportunities (Cetindamar et al., 2012). According to the literature, entrepreneurs have the ability to recognize the right entrepreneurial

opportunities, with their ability to perceive good business opportunities being considered their most distinguishing characteristic (Capelleras, Contín-Pilart, Martin-Sanchez, & Larraza-Kintana, 2013; De Clercq & Arenius, 2006). Accordingly, individuals that possess greater amounts of knowledge and skills tend to discover more entrepreneurial opportunities and should be more successful at discovering new opportunities (Davidsson & Honig, 2003; Gonzalez-Alvarez & Solis-Rodriguez, 2011).

One reason for business failure is insufficient knowledge and information (Rauch & Rijdsdijk, 2013). Human capital helps reduce the risk of failure since it helps identify and exploit the right opportunities (Rauch & Rijdsdijk, 2013). The human capital theory is applicable to entrepreneurship since it helps explain individual ability to identify, plan, or execute a new business venture (Barnir, 2014).

The resource-based view (RBV) of the firm defines business resources as “bundles of tangible and intangible assets” and includes tangible, human, and organizational resources (Barney, Ketchen, & Wright, 2011, p. 1300; Kungwansupaphan & Siengthai, 2014). Human capital is an intangible resource of the firm and an important part of business advantage (Kungwansupaphan & Siengthai, 2014). Entrepreneurs are an intangible resource composed of their knowledge and skills along with their relationships and use their human capital resource to produce positive business results and determine the business's values and strategies (Kungwansupaphan & Siengthai, 2014).

Santarelli and Tran (2013) found that individual human capital and successfully starting a business are positively related to one another. Human capital from education, experience, and learning were all related to the entrepreneur's performance (Santarelli & Tran, 2013). However, previous entrepreneur experience was negatively related to

business performance (Santarelli & Tran, 2013). According to Santarelli and Tran (2013), this finding is likely the result of the risk aversion of experienced entrepreneurs. The emergence of university start-ups illustrates the significance of the individual entrepreneur's human capital (Criaco et al., 2013). The companies that are started at universities often lack the financial resources but do have the founder's human capital to develop the new business and provide more opportunities for salaried employment in the university (Criaco et al., 2013).

Human Capital Constructs

The literature proposed several human capital constructs. In order to operationalize these constructs and measure human capital, it was necessary to first describe the relevant measures found in the literature. The individual's human capital characteristics that were examined included age, gender, and education and are important since those individuals with solid human capital will be more capable of identifying new successful entrepreneurial opportunities (Davidsson & Honig, 2003; Rocha et al., 2015).

Age

The age of the aspiring entrepreneur impacts business start-ups (Rocha et al., 2015). However, the empirical evidence between age and entrepreneurship is mixed (Van der Zwan et al., 2013). One study found a direct relationship between the entrepreneur's age and entrepreneurship, while several studies suggested that new businesses are likely to be founded by older individuals. These entrepreneurs are likely to be < 45 years of age (Brixy, Sternberg, & Stüber, 2012; Kautonen et al., 2014; Neira et al., 2013; Rocha et al., 2015). Furthermore, entrepreneurial activity has been found to increase to a certain age (late 40s) and then decrease thereafter for entrepreneur owner-

managers (Kautonen et al., 2014). However, age has been found to have a small impact on those entrepreneurs who do not have other options for employment (Kautonen et al., 2014).

The expectation is that older individuals not only have the know-how and experience but the financial capital needed for entrepreneurship (Irastorza & Peña, 2014). According to Irastorza and Peña (2014), even though there are a few exceptions, a positive correlation exists between age and experience. However, a study by Gonzalez-Alvarez and Solis-Rodriguez (2011) found younger individuals were better at discovering entrepreneurial opportunities.

Gender

The individual human capital characteristic of gender has demonstrated importance to entrepreneurship. According to Van der Zwan, Verheul, Thurik, and Grilo (2013), evidence of gender differences is mixed even though some studies did find entrepreneur gender differences. The literature indicated males are more likely to become entrepreneurs (Lazear, 2005; Rocha et al., 2015; Tinuke, 2013; Van der Zwan et al., 2012). Additionally, a study by Arenius and Minniti (2005) found that women are less likely to become entrepreneurs.

One explanation for gender differences in entrepreneurship is men discover more entrepreneurial opportunities than women. Another possibility is that women are averse to entrepreneurial risks since they are hindered by work-life balance and social convention (Gonzalez-Alvarez & Solis-Rodriguez, 2011; Tinuke, 2013; Wagner, 2007). A woman's performance as an entrepreneur is due to a lack of resources which, in

comparison to male entrepreneurs, is attributable to role expectations and career paths that have a relationship on a woman's human and financial capital (Tinuke, 2013).

Entrepreneur stereotypes suggest entrepreneurs are characterized as risk takers and assertive which are viewed as masculine traits (Tinuke, 2013). Therefore, women may perceive a career as an entrepreneur unsuitable due to existing gender stereotypes, despite the fact that De Vita, Mari, and Poggesi (2014) found from the 2010 GEM Women's Report that approximately 42% entrepreneurs worldwide are actually women (Tinuke, 2013). However, the evidence of the impact of gender on the inclination to start a business is clear; women exhibit less inclination than men to engage in entrepreneurship worldwide (Jennings & Brush, 2013).

Education

While individual entrepreneur characteristics include age and gender, formal education and training are identified as individual human capital characteristics (Becker, 1993). Formal education and training are considered the most significant human capital investments (Becker, 1993). Researchers sometimes use formal education as a proxy for knowledge and skills (Lofstrom et al., 2014). One previous study suggested a positive relationship between education and starting a business (Davidsson & Honig, 2003). Similarly, studies on entrepreneurship by Arenius and Minniti (2005) and Rocha et al. (2015) found a positive relationship between education and entrepreneurship. Therefore, a relationship between formal education and entrepreneurship is likely.

Formal education is important to entrepreneurship since it is responsible for the transference of many cognitive skills and knowledge and provides specific skills that help the entrepreneur run certain types of businesses (e.g., accounting or engineering firms)

(Lofstrom et al., 2014). Additional benefits of formal education include an understanding of markets and entrepreneurial processes (Lofstrom et al., 2014).

Individuals with higher levels of formal education do not necessarily favor entrepreneurship as a career option; more educated individuals almost always earn above average earnings (Becker, 1993). For example, higher levels of formal education give the individual more options for salaried employment and can actually discourage entrepreneurship (Lofstrom et al., 2014). Similarly, Van der Zwan et al. (2013) found that highly educated individuals might have more rewarding employment opportunities that encourage them to pursue a line of work as an employee.

Education is a signal that employers use to base their hiring decisions because it makes the college graduate more productive individuals, which in turn increases their attractiveness to employers (Xavier-Oliveira, Laplume, & Pathak, 2015). Individuals that further their formal education seek returns on their investments (Becker, 1993). While a career as an employee is one way to offer a return on an investment in formal education, entrepreneurship is attractive to individuals with higher levels of formal education if entrepreneurship offers them amply higher returns (Lofstrom et al., 2014).

The United States is often described as the "land of opportunity." In order to profit from the many opportunities that exist, aspiring entrepreneurs must identify those opportunities that provide high returns. The fundamental part is being able to see it and act on it before other individuals (Hunter, 2013). Human capital obtained through education is relevant to entrepreneurship since it is linked to opportunity identification and talent for entrepreneurship (Rocha et al., 2015). Because higher education helps individuals discover new opportunities for business development and highly specialized

knowledge helps with opportunity recognition, awareness of human capital advantages is one component that opens up opportunities for entrepreneurs (Gonzalez-Alvarez & Solis-Rodriguez, 2011; Hsiao et al., 2013).

Higher education can be beneficial to an entrepreneur in several ways. One way is in the expectation that entrepreneurs with more education have greater strategic capabilities, which help the entrepreneur pioneer new products and differentiate their products, forming a competitive advantage (Lofstrom et al., 2014). Entrepreneurs who pioneer new products might be able to create new profitable niches and erect barriers to entry for potential competitors (Lofstrom et al., 2014). Therefore, higher education is needed to master difficult industrial problems and foster new innovations (Lofstrom et al., 2014).

Higher entrepreneur education levels might provide the entrepreneur with enhanced problem-solving and decision-making abilities for developing a business since human capital acquired from education has been found to be one of the greatest forces of successful entrepreneurship (Baptista et al., 2014; Millan, Congregado, Roman, Van Praag, & Van Stel, 2014). Education level, for example, is identified as an important predictor of immigrant entrepreneur earnings (Irastorza & Peña, 2014). A formal education might encourage opportunity identification and expand the capability to establish and run a new business (Van der Zwan et al., 2015).

The previous studies suggested that more human capital acquired through education is important for starting a business. However, even with a constant increase in education level over the past decades, the entrepreneurship rate has not increased with this increase in education level (Backes-Gellner & Moog, 2013). A plausible explanation

is that over-investment in education and certification may deter risk-taking since entrepreneurs deal with uncertain situations that involve risks, and uncertain entrepreneurial business situations are more troublesome for risk-averse individuals (Brandstätter, 2011; Davidsson & Honig, 2003). As a result, the previous literature suggested that higher educational attainment is more associated with playing it safe as an employee and avoiding the uncertainties that surround a career as an entrepreneur. Human capital accumulation is partially the result of prior experience, learning on the job, and prior training courses (Davidsson & Honig, 2003). Martin, McNally, and Kay (2013) found that entrepreneurial education and training (EET) are positively related to entrepreneurial human capital, as well as a positive association with entrepreneur intentions. In a study of students in Spain, Sánchez (2013) found that entrepreneur education had a positive relationship with competencies and intentions. Even though the previous literature suggested entrepreneurial training courses increase human capital, it is more difficult to show that specific training increases human capital without a further isolation of program impact. Therefore, this study focused more on general human capital accumulation through education.

The resource-based view (RBV) of the firm, which originated in the management arena, focused more on the study of larger and more established companies and was designed to determine which strategic resources a firm needs to maintain a competitive advantage (Kellermanns, Walter, Crook, Kemmerer, & Narayanan, 2014). According to the RBV, a strategic resource is "valuable, inimitable, and nonsubstitutable" (Kellermanns et al., 2014, p. 2). The increased amount of searches for RBV articles

within the context of entrepreneurship on Google suggested the RBV has become increasingly influential in entrepreneurship (Kellermanns et al., 2014).

The use of the RBV in entrepreneurship studies is not without criticism (Kellermanns et al., 2014). For example, entrepreneur researchers tend to study smaller firms rather than larger established firms (Kellermanns et al., 2014). Additionally, no general consensus has been found among the RBV researchers on what constitutes a resource since the resources tend to be inconsistent across studies (Kellermanns et al., 2014). A similarity found between resource conceptualization by researchers and entrepreneurs is that they classify resources as either tangible or intangible (Kellermanns et al., 2014). Thus, since the focus of this study was on entrepreneurs that are currently in the nascent stage of entrepreneurship instead of larger more established firms, the RBV theoretical perspective was not incorporated into the analysis.

Social Capital Theory

Entrepreneurs have a unique set of knowledge, skills, and abilities or human capital, but human capital resources are just part of the capital resources entrepreneurs access during a business startup. It is sometimes said that it is not your knowledge (human capital), but your connections (social capital) that make all the difference in a business setting. Individuals who have network resources through “ties with others” will be able to realize their goals (Schutjens & Völker, 2010, p. 943). Thus, studies that examined only human capital ignored the relationship of network ties on realizing the goal of becoming an entrepreneur.

Social capital's relationship on entrepreneurship has been of academic interest for a long time (Kwon, Heflin, & Ruef, 2013). Tocqueville in 1835 mentioned that the

capability for association was one explanation for the vitality of American entrepreneurship (Kwon et al., 2013). Social capital is significant since it has been found to be positively related to the startup rate of businesses and is a vital enabler to help assemble resources to build a new business (Hsiao et al., 2013; Westlund et al., 2014). Additionally, social capital is an essential part of achieving success in business and life (Baker, 2000). In order to examine the relationship that social capital has with entrepreneurship, it is important to review how it is defined in the literature.

Social Capital Definition

The literature provides several definitions for social capital. Social capital is a resource that exists in network relationships which can be converted into other forms of capital such as monetary capital. *Social capital* was defined in the literature as those resources that come from one's social or relationship networks (Gedajlovic et al., 2013; Portes & Vickstrom, 2015). According to Li et al. (2013), *social capital* is defined as those tangible and prospective resources embedded in social relationships. Social capital is also a combination of social connections that are exchangeable into economic capital (Felício et al., 2012).

The *social* part of social capital suggests that social resources are not personal since no single individual owns them, while the "capital" part in social capital suggests it is productive capital for the individual (Baker, 2000). An example of social capital include relationships with family, other entrepreneurs, or even lenders and is rooted in the relationship organization of social networks (Huang, Lai, & Lo, 2012). Additionally, three different types of connections exist within social networks.

Two types of social bonds were distinguished in the literature (Estrin et al., 2013). The first type, bonding/strong-tie social capital, is the unity inside small social groups (Estrin et al., 2013). Schutjens and Völker (2010) described access to social capital as more prominent with strong ties for a sample of Dutch entrepreneurs. The second type of social capital, bridging/weak-tie social capital, fosters collaboration among those individuals from previously unrelated social groups (Estrin et al., 2013). Weak ties are important to aspiring entrepreneurs for several reasons. They lower transaction costs for the entrepreneur by providing access to new information and resources, and their existence enables entrepreneurs to access new opportunities (Estrin et al., 2013). Thus, strong and weaker network relationships are important to the entrepreneur since they both enable the entrepreneur to access additional resources.

Trust

Trust is beneficial to economic activity, and previous social relationships help new business owners build trust faster due to the familiarity with their abilities (Chuluunbaatar et al., 2011; Kwon et al., 2013). Social capital embedded in trusting network relationships enables individuals to exchange information resources to meet individual goals (Huang et al., 2012). Additionally, entrepreneurship involves reliance on others for assets and support; if built through previous direct or indirect interactions with others, it fosters trust with the entrepreneur (De Carolis & Saporito, 2006). For example, Ramos-Rodríguez et al. (2012) found that knowing entrepreneurs and having previous business investment experience as a business angel were significantly related to hotel and restaurant entrepreneurship.

With that being said, new business owners often have problems building trust in customers, suppliers, and lenders since established trusting relationships help motivate entrepreneurs to look and act on opportunities. The trust, honesty, and transparency from preexisting social relationships reduce the uncertainty surrounding a new business, thereby encouraging individuals to become entrepreneurs (De Carolis & Saporito, 2006; Kim & Kang, 2014). However, entrepreneurs can become overconfident about the new business opportunity since they believe others will deliver support and resources (De Carolis & Saporito, 2006). Additionally, the literature offers alternative views on entrepreneurial social capital. According to Keating, Geiger, and McLoughlin (2014), social capital resources are not “out there” waiting to be captured by the individual entrepreneur; instead, resourcing efforts are carried out rather than something that is owned and can be cashed in by the entrepreneur. Social capital helps the entrepreneur learn from others so that they can adjust to the situation and become very successful (Keating et al., 2014).

Social Capital Constructs

The literature suggests that entrepreneurial social capital lies in the social network resources of the entrepreneur (Stam et al., 2014). Social capital is in the relationships that help foster cooperation for mutual benefit and are important in starting a business (Arenius & Minniti, 2005; De Carolis, Litzky, & Eddleston, 2009; Ramos-Rodríguez et al., 2012). In fact, individuals who are “well connected” through numerous social relationships will be more successful at starting a new business (De Carolis et al., 2009, p. 530). For example, one benefit of knowing other entrepreneurs is that the individual has an entrepreneurial role model who helps the individual reduce the uncertainty of

starting a new business which, in turn, encourages entrepreneurship (Arenius & Minniti, 2005; Kim & Kang, 2014). Thus, network relationships help reduce uncertainty and encourage entrepreneurship.

Family

Social capital is also enhanced via family members who are entrepreneurs (Ramos-Rodríguez et al., 2012). Family capital is a form of social capital whereby entrepreneurs gain access to additional human capital from family members (Cetindamar et al., 2012). Accordingly, younger individuals under age 30 years list family or friends as sources for advice since they have less developed networks (Robinson & Stubberud, 2014). Another study by Xie (2014) found that female entrepreneurs in China benefitted from strong social ties with family, relatives, and other females.

Social capital helps entrepreneurs by providing social connections to mobilize the necessary resources needed to develop and promote new products or services (Samila & Sorenson, 2015; Stam et al., 2014). According to the literature, resources are sometimes described as financial or intellectual resources (Stam et al., 2014). Companies are financed by the founder's financial resources, but more frequently financial capital comes from banks, venture capital firms, or angel investors (Samila & Sorenson, 2015).

In China, a significant amount of new business financing comes from personal savings, family, or friends (Talavera, Xiong, & Xiong, 2012). However, some Chinese entrepreneurs are able to secure new venture financing from a bank or private agency (Talavera et al., 2012). Social capital plays a role in a Chinese entrepreneur's ability to obtain bank financing, and social networking is important for obtaining business loans (Talavera et al., 2012). Since business associations are able to provide banks with

information on the entrepreneur, information asymmetry is reduced (Talavera et al., 2012).

Entrepreneurs are not experts in every aspect of their business. In fact, social capital helps by countering human capital deficiencies and provides access to broader and more timely sources of information (Adler & Kwon, 2002; Hmieleski & Carr, 2008). For example, an entrepreneur with a greater amount of social capital might have access to accounting or legal advice (Adler & Kwon, 2002).

Santarelli and Tran (2013) found a positive effect on the interaction of human and social capital and new business performance, since entrepreneurs that were a part of a formal business network were found to be more successful (Santarelli & Tran, 2013). According to Alvarez and Barney (2014), the exploitation of opportunities is from those individuals who not only have the human capital but have developed financial networks that provide financial capital to the business.

Liu and Lee (2015) found that the exploration of intangible resources, such as social capital, has become more important. Since social connections are often built through customer communications, trust, and associations, trust built between businesses and their patrons in Taiwan helped build a regular customer base (Liu & Lee, 2015). Additionally, maintaining those customer relationships is an important component of building trust between a business and its customers (Liu & Lee, 2015). Social capital built through communications with customers, solid relationships, and associations all were found to significantly impact an individual's path towards entrepreneurship (Liu & Lee, 2015). Therefore, customer relationships are important in building social capital.

Venture capitalists chose to fund a new technology business based on many factors that include the type of business as well as the entrepreneur who will start and run the business (Tinkler, Whittington, Ku, & Davies, 2015). Funding decisions that are primarily focused on the individual sometimes place gender as an important funding criteria (Tinkler et al., 2015). However, funding decisions based on the entrepreneur's gender can be moderated by their technical capabilities (Tinkler et al., 2015).

Additionally, a strong relationship between an entrepreneur and a venture capitalist is crucial to help minimize the risks of investing in a new business (Tinkler et al., 2015). Strong relationships with a venture capitalist along with the technical expertise are more important for women who want to become an entrepreneur in the technology sector, while men with technical expertise are stereotyped as having the technical capabilities but lacking the social competence for entrepreneurship (Tinkler et al., 2015). However, male entrepreneurs without technology backgrounds (e.g., Steve Jobs and Michael Dell) are well-known successful technology entrepreneurs who may be identified as having social competence but are not stereotyped as lacking technical competence (Tinkler et al., 2015). Thus, relationships with venture capitalists are important for entrepreneurs in the technology industry.

Knowing Other Entrepreneurs

Knowing other entrepreneurs provides a role model to start a new business and, from a social capital perspective, is likely to provide the entrepreneur with higher quality information and resources (Ramos-Rodríguez et al., 2012). Additionally, knowing other entrepreneurs helps guide relationships with financial institutions (Ramos-Rodríguez et

al., 2012). Therefore, knowing other entrepreneurs increases the network resources that an entrepreneur needs to successfully start a business.

Business Angel Investors

Ramos-Rodríguez et al. (2012) found that having previous business investment experience as a business angel was significantly related to entrepreneurship. A business angel provides startup funds to an entrepreneur, has some knowledge of entrepreneurship, and is accustomed to dealing with the business risks of a startup (Ramos-Rodríguez et al., 2012). Additionally, the relationships made with entrepreneurs through previous business angel investing educate the business angel on successful business ideas (Ramos-Rodríguez et al., 2012). Therefore, a previous business angel investor is likely to expand the network resources of an entrepreneur.

Personality Characteristics

The motives of entrepreneurs often originate from their personality characteristics, which contribute to the entrepreneurial mindset (Brandstätter, 2011). For example, a study of female Chinese entrepreneurs found entrepreneurial motives originated from personality characteristics, such as a need for independence, imagination, and confidence (Xie, 2014). Additionally, entrepreneurs are often characterized as being open to exploring new opportunities, diligent extroverts who take risks, and those who strive to achieve lofty goals (Brandstätter, 2011). Furthermore, entrepreneurs are described as self-assured, insistent and determined, and optimistic (Tinuke, 2013).

The literature suggests a strong relationship between only some personality characteristics and entrepreneurship (Luca, Cazan, & Tomulescu, 2012). For example, a strong relationship has been found between the entrepreneur and social skills, drive, and entrepreneurship, while being proactive, having a belief in being able to control events in one's life or having the imagination to create new ideas, and having little predictive importance for entrepreneurship (Luca et al., 2012). However, Luca et al. (2012) studied a group of students instead of entrepreneurs engaging in actual entrepreneurial activities. Therefore, the previous literature suggested that individual personality characteristics play a part in entrepreneurial activities.

Entrepreneurship Definitions and Measurements

In order to examine the characteristics related to entrepreneurial intentions, previous studies used the theory of planned behavior as the theoretical basis, which proposes that it is possible to predict intentions by individual attitudes or beliefs (Ajzen, 1991; Kadir, Salim, & Kamarudin, 2012; Moriano, Gorgievski, Laguna, Stephan, & Zarafshani, 2012). For example, Kadir et al. (2012) found a significant relationship between the belief about being able to control what happens in one's life and entrepreneurial intentions. Additionally, Moriano et al. (2012) examined entrepreneurial intentions with the theory of planned behavior across cultures and found that attitudes are related to entrepreneurial intentions.

However, while intentions might be suggestive of the predisposition to start a business, intentions are still indicative of those individuals on the sidelines who have yet to become an entrepreneur. According to Stam et al. (2014), *entrepreneurs* are defined as "the founder, owner, and manager" (p. 154) of a small business. Similarly, Brandstätter

(2011) defined an *entrepreneur* “as the founder, who also owns and manages his small business” (p. 225). These definitions suggest an entrepreneur is not on the sidelines waiting for the opportunity to get in the game but actually takes action to start and manage a new business. However, the point at which individual intentions are left behind to take action is when the entrepreneurial journey begins.

Nascent Entrepreneurs

According to Brixy and Hessels (2010), “entrepreneurship starts with nascent entrepreneurship” (p. 3). Nascent entrepreneurs are characterized as individuals that take action by engaging in the activities of a new entrepreneur (Capelleras, Contín-Pilart, Martin-Sanchez, & Larraza-Kintana, 2013). Furthermore, while the nascent entrepreneurship phase of the entrepreneurial process is described as an actionable phase, it is important to note that the actions taken by the nascent entrepreneur are not always successful (Brixy & Hessels, 2010).

The stages of starting a business, sometimes described as the stages prior to the official startup, consists of four stages with the first stage being the entrepreneurial intentions stage (Brixy & Hessels, 2010). Next, in the second stage, the entrepreneur recognizes an actual opportunity. In the third stage, the entrepreneur gathers the resources and creates the organization (Brixy & Hessels, 2010). Finally, in the fourth stage, the new organization starts to conduct business (Brixy & Hessels, 2010). Nascent entrepreneurial actions are associated with the second and third stages in this process (Brixy & Hessels, 2010).

One of the questions in entrepreneur research is why do individuals enter into entrepreneurship (McCann & Folta, 2012)? The threshold is the level of performance

that initiates individual entry into entrepreneurship (McCann & Folta, 2012). McCann and Folta (2012) investigated the drivers of the unobserved threshold into entrepreneurship in order to provide more insight into the causal role of entrepreneurship entry determinants. If the anticipated performance is greater than the threshold, the individual takes action as an entrepreneur (McCann & Folta, 2012).

Entrepreneurial research by McCann and Folta (2012) examined nascent entrepreneurship entry points for a sample of nascent entrepreneurs in the United States and found that nascent entrepreneurs tended to have more entrepreneurial experience. However, nascent entrepreneurs with more industry experience as a manager were found to have a higher entry point into entrepreneurship (McCann and Folta, 2012). Additionally, the relationship between the entry point into entrepreneurship and entrepreneurial experience was not significant (McCann & Folta, 2012).

Davidsson and Gordon (2015) studied the responses of nascent entrepreneurs to macroeconomic crisis. Nascent entrepreneurs were not more likely to disengage from the business creation attempt as a result of the onset of a macroeconomic crisis like the global financial crisis (Davidsson & Gordon, 2015). Also, nascent entrepreneurs that are well into the start-up process appeared to be determined to move forward. However, founders of technology firms were found more likely to disengage from the business creation attempt as a result of a macroeconomic crisis (Davidsson & Gordon, 2015).

Network relationships are expected to provide entrepreneurs in the nascent stage with capital and social connections and provide entrepreneurs at all stages network benefits (Semrau & Werner, 2014). However, Semrau and Werner (2014) found diminishing marginal returns for access to resources by increasing their network contacts

and the quality of those network relationships. This finding suggests nascent entrepreneurs do not need to focus on the number of network contacts—instead gaining access to the resources through their connections (Semrau & Werner, 2014).

This study classifies entrepreneurs as those individuals that are no longer on the sidelines with the intention to become an entrepreneur but have taken action and are now in the game. Specifically, this study examined entrepreneurs that are in the early or nascent entrepreneurial stage (Brixy & Hessels, 2010). The nascent entrepreneur is characterized as an individual that takes action to find opportunities, gather resources, and create a new business (Brixy & Hessels, 2010).

Summary

According to the U.S. Small Business Administration (2014), small business job opportunities account for most of the jobs created in the United States. However, the recent decline in entrepreneurship in the United States is cause for concern for policymakers that want to create more jobs through entrepreneurship and is also important for educators who desire to produce students with the knowledge, skills, and abilities that produce economic value as an entrepreneur. The study of the relationship between human and social capital characteristics and entrepreneurship is important for the aspiring entrepreneur who wants to increase his or her chances of success.

Previous studies acknowledged that human and social capital are related to hotel and restaurant entrepreneurship in the United States (Ramos-Rodríguez et al., 2012). Additional studies also acknowledged the impact of human and social capital factors on entrepreneurship outside the United States. One study isolated the analysis of entrepreneurs to the country of Peru by examining GEM entrepreneurship data on early-

stage Peruvian entrepreneurs. The findings suggested that there are distinct human and social capital characteristics related to entrepreneurship (Nishimura & Tristán, 2011).

Research is needed to further examine the human and social capital characteristics that are related to entrepreneurship in the United States. The analysis of individual human and social capital is important for helping policymakers determine how to best use their legislative and fiscal powers to create jobs through entrepreneurship and to help address individual knowledge and skill gaps before starting a business.

The literature suggests that entrepreneurial human capital consists of several characteristics, with age being one of those characteristics. However, the literature is mixed on whether there is a positive relationship between age and entrepreneurship. Educational level is another human capital characteristic found in the literature. A college education is important to build general human capital as an entrepreneur. While a college student might learn accounting, marketing, and finance skills that are relevant to entrepreneurship, a higher level of education is not necessarily positively related to entrepreneurship. One possible explanation for this finding is that those individuals with higher levels of education have more opportunities for salaried employment. Finally, there is a relationship between gender and entrepreneurship, with men slightly more likely to become entrepreneurs than women.

The literature suggests that entrepreneurial social capital consists of several characteristics. The first characteristic knows other entrepreneurs is positively related to starting a business. One reason is they can access their social network resources that have complementary entrepreneurial human capital. The second factor is the relationship with angel investors is important since entrepreneurs can access funds to start the

business. Previous experience as a business angel investor also enables the entrepreneur to build trust much faster than they would from starting a relationship from scratch. In addition to experience as a business angel investor, relationships with banks, family members, and private investors are also important for social capital. Therefore, social capital built through previous relationships is important to the entrepreneur.

Chapter III will present the design and methodology of this study. The dataset chosen for this study will be described in more detail. The survey population and instrument will be explained. The data collection process will also be explained in more detail. Finally, the data analysis section of this study will be discussed.

CHAPTER III - DESIGN AND METHODOLOGY

The purpose of this study was to determine the relationships between the demographic characteristics of age and gender, the human capital characteristic of education level, and the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor that exists with nascent entrepreneurs and expected job growth in the United States. This chapter includes the population, sample, research design, threats to validity and reliability, ethical considerations, data collection, instrument review, data analysis, limitations, delimitations, and assumptions of the study.

Research Objectives

The research study addressed the following research objectives.

- RO1: Describe the demographic characteristics of the sample in terms of age, gender, the human capital characteristic of education level, the social capital characteristics of knowing other entrepreneurs, and being a previous business angel investor as reported in the GEM.
- RO2: Determine the relationship between the demographic characteristic of age of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO3: Determine the relationship between the demographic characteristic of gender of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO4: Determine the relationship between the human capital characteristic of education level of United States nascent entrepreneurs and expected job growth in the United States as reported in the GEM.

- RO5: Determine the relationship between the social capital characteristic of knowing other entrepreneurs and expected job growth in the United States as reported in the GEM.
- RO6: Determine the relationship between the social capital characteristic of being a previous business angel investor and expected job growth in the United States as reported in the GEM.
- RO7: Determine the influence of the demographic characteristics of age and gender, the human capital characteristic of education level, the social capital characteristics of knowing other entrepreneurs, and being a previous business angel investor on expected job growth as reported in the GEM.

Population

Data selection is an important part of the research process because in order to test theory the researcher first needs data (Field, 2013). The population refers to a collection of units to which research findings from a subset of that population are generalizable (Field, 2013). The GEM Adult Population Survey for 2011 categorizes survey respondents as adults that express entrepreneurial attitudes, nascent entrepreneurs, new business owners, established business owners, and entrepreneurs that have stopped business activity (Bosma et al., 2012). The population for this study consisted of 387 nascent entrepreneurs from the United States as identified in the GEM Adult Population Survey for 2011.

This population chosen for the current study is relevant since this research study is about entrepreneurship in the United States. The GEM collects data on entrepreneurs

at the individual level across different stages in the entrepreneurial process and uses a data collection methodology that is invariant across countries (GEM, 2016). Specifically, data collection at the individual level from the GEM is important for the study of individual human and social capital characteristics. The collection of data at the individual level makes the GEM Adult Population Survey (APS) for 2011 data appropriate for this study's problem and purpose. Moreover, datasets used in entrepreneurial research should have additional characteristics of entrepreneurs, e.g., the GEM APS 2011 dataset, since the inclusion makes it possible for future researchers to make meaningful academic contributions by extending the current study.

The GEM entrepreneurship research program was created in 1997 by researchers at the London Business School and Babson College (Bosma et al., 2012). The GEM, which began collecting data on entrepreneurs in 1999, implements an international research methodology designed to capture data on entrepreneurs and provides a greater understanding of entrepreneurship (GEM, 2016). With over 16 years of experience collecting data on entrepreneurs worldwide, the GEM researchers provide higher quality data to the academic community (GEM, 2016). The data collection effort involves over 200,000 interviews conducted in over 100 countries with greater than 500 entrepreneurship researchers specializing in the study of entrepreneurship (GEM, 2016).

The GEM has national teams tasked with either gathering data or selecting survey vendors to gather survey data on entrepreneurial activity from adult participants typically ranging from ages 18 to 99 years and located in urban and rural geographic areas (Bosma et al., 2012). However, participants might also be limited to individuals between the ages of 18 and 64 years if gathering survey data on individuals between the ages of 18 and 99

years is not feasible (Bosma et al., 2012). Furthermore, retirees, students, and homemakers are excluded from the survey (Bosma et al., 2012).

The representative sample surveyed by the GEM survey vendors consists of at least 2,000 adults typically surveyed via landline phone numbers randomly generated from telephone service provider lists between May and August annually (Bosma et al., 2012; Reynolds et al., 2005; Santiago-Roman, 2013). The landline coverage in the country must be greater than 85% of households to conduct landline phone interviews (Bosma et al., 2012). If it is less than the 85% threshold, contact methods will also include mobile phone numbers or face-to-face interviews (Bosma et al., 2012). The first adult in the household, typically called at night during the work week or during the day on the weekend, is asked to participate in the survey (Reynolds et al., 2005). However, some vendors that administered the GEM survey might select an adult participant at random from the household (Reynolds et al., 2005).

Individual-level entrepreneur data are important since businesses are started by individual entrepreneurs (Reynolds, Bygrave, & Hay, 2003). The GEM dataset is the only entrepreneurial dataset that provides individual early-stage entrepreneurial data, while data taken at the national or industry level do not capture the individual characteristics of the entrepreneur (Reynolds et al., 2003). Additionally, analysis of data at the level of individual entrepreneurs helps inform policymakers on how best to build individual entrepreneurial human capital (Reynolds et al., 2003).

Sample

The census data for this study consisted of nascent entrepreneurs who have taken action and started a business within the past year for which they have not been paid

compensation in the form of salaries or wages from the business for over 3 months (Reynolds et al., 2005). This design produced data from operational rather than prospective entrepreneurs. The measure for nascent entrepreneurial activity in the GEM dataset is described as “percentage of the adults aged 18-64 who are setting up a business” (Reynolds et al., 2005, p. 216). In order to examine nascent entrepreneurs, respondents to the GEM survey must first answer *yes* to a set of three screening questions to determine if those respondents are nascent entrepreneurs (Bosma et al., 2012). Next, survey respondents must answer *no* to the fourth screening question to determine if any compensation has been made from the business for longer than 3 months, thereby reclassifying the business as an existing firm (Bosma et al., 2012). To proceed to the next three nascent entrepreneur screening questions, participants must answer *yes* to either Question 1a which asks if the participant is trying to start a business on their own or Question 1b which asks if the participant is trying to start a business for their employer (Reynolds et al., 2005):

1a. “You are, alone or with others, currently trying to start a business, including any self-employment or selling any goods or services to others.” (Reynolds et al., 2005, p. 213)

1b. “You are, alone or with others, currently trying to start a business or a new venture for your employer—an effort that is part of your normal work.”

(Reynolds et al., 2005, p. 213)

2. “Over the past 12 months have you done anything to start a new business, such as looking for equipment or a location, organizing a start-up team, working on a

business plan, beginning to save money, or any other activity that would help launch a business?” (Reynolds et al., 2005, p. 214)

3. “Will you personally own all, part, or none of this business?” (Reynolds et al., 2005, p. 214)

4. “Has the business paid any salaries, wages, or payments in kind, including your own for more than three months?” (Reynolds et al., 2005, p. 214)

Individuals were identified as nascent entrepreneurs based on the survey screening questions from 5,863 participants from the GEM Adult Population Survey for 2011 in the United States (Santiago-Roman, 2013). The GEM Adult Population survey questions for determining entrepreneurial stage (nascent stage) have been established by GEM researchers, set forth by Reynolds et al. (2005), and used by other researchers for analysis of GEM survey respondents based on their stage in the entrepreneurial process (Ramos-Rodríguez et al., 2012). More specifically, the census of nascent entrepreneurs was purposely selected from the GEM adult survey respondents based on their affirmative answers to the first three of the following survey questions and *no* to the fourth (Reynolds et al., 2005; Santiago-Roman, 2013).

The researcher arrived at the census size ($N = 387$) of nascent entrepreneurs for this study by determining which survey respondents from the GEM APS 2011 dataset answered *no* to the fourth nascent entrepreneurial stage screening question (Reynolds et al., 2005). According to Raosoft (2014), a population of 387 requires a sample size of 194 for 95% confidence with a CI of $\pm 5\%$. However, the researcher used a census sampling method which means that the sample of nascent entrepreneurs is the same as the

population (Field, 2013). The statistical power of the census is an appropriate size to overcome threats to validity based on the census size ($N = 387$; Field, 2013).

Research Design

Research designs are helpful to the researcher since they guide the researcher's choice of methods for the study with the best method chosen by the researcher being the one that fits the research problem and the research questions (Creswell & Clark, 2011). The researcher used a nonexperimental correlational cross-sectional research design in this study, specifically a correlational cross-sectional study based on archival data from the GEM Adult Population Survey in 2011 (Santiago-Roman, 2013). Cross-sectional research designs are applicable to data gathered at one point in time from a specific population (Santiago-Roman, 2013). A correlational cross-sectional research design is appropriate for this study since the researcher's goal was to examine potential relationships between variables from a specific adult population at one point in time (Santiago-Roman, 2013).

This study examined a sample of nascent entrepreneurs selected through a process to utilize only those entrepreneurs who are operational as opposed to prospective from the population of GEM participants in the United States. The census of nascent entrepreneurs was purposefully selected from the GEM APS 2011 Survey in the United States since the entrepreneur characteristics can be measured from this dataset (Santiago-Roman, 2013). According to Belli (2009), examining variables as they are instead of performing manipulations of those variables is characteristic of a nonexperimental research design. In this study, the researcher did not perform experimental manipulations of independent variables, which is characteristic of an experimental research design

(Belli, 2009; Santiago-Roman, 2013). Therefore, a nonexperimental research design was more appropriate for this study.

Worldviews influence the research design chosen by the researcher (Creswell & Clark, 2011). The Postpositivist Worldview is characterized by testing existing theory—rather than theory generation—and is associated with a quantitative research approach (Creswell & Clark, 2011). In this study, the researcher's goal was not to generate theory; therefore, a quantitative design was more appropriate to analyze the research objectives (Creswell & Clark, 2011).

Validity and Reliability

A properly designed research study addresses issues with validity and reliability (Creswell & Clark, 2011). Therefore, the researcher took steps to address the potential threats to these issues. The issues with validity and reliability in this study are addressed in this section.

Internal Validity

Internal validity is the degree to which the researcher can determine a causal relationship among the variables in the study (Creswell & Clark, 2011). The researcher took steps to address the possible threats to the internal validity of this study, which included methodological limitations, selection bias, and low statistical power. The methodological limitations included how appropriate the research objectives are for research conducted with the GEM APS 2011 dataset (Santiago-Roman, 2013).

Additional methodological limitations to the study's internal validity were the completeness of the GEM survey participants' answers to the survey questions (Santiago-Roman, 2013). Therefore, research results of this cross-sectional study design using the

GEM APS 2011 dataset were not ideal for establishing causation (Santiago-Roman, 2013).

Selection bias can exist in studies due to the absence of random assignment (Shadish et al., 2002). This study used purposeful sampling to examine the relationship between demographic, human capital, and social capital characteristics of nascent entrepreneurs and expected job growth in the United States. The data for this study consisted of a sample designed to include nascent entrepreneurs who founded and owned businesses within the past year for which they had received some form of compensation from the business in the last 3 months and produced data from operational rather than prospective entrepreneurs. The GEM survey included individual data on nascent entrepreneurs, new businesses, and established firms (Santiago-Roman, 2013). A random selection of participants from the GEM dataset is likely to capture nascent entrepreneurs, new businesses, and early-stage entrepreneurs. Therefore, while selection bias is present with the purposeful sampling of the participants, it is necessary to focus on a purposeful sample of nascent entrepreneurs from the GEM APS 2011 dataset.

High statistical power can help reduce the threat to internal validity from having lower statistical power in a study (Shadish, Cook, & Campbell, 2002). High statistical power means there is a higher likelihood of the researcher rejecting a false null hypothesis (Field, 2013; Shadish et al., 2002). Because sample sizes are a concern to the researcher with existing datasets, the number in the sample can be limited by the number of participants in the dataset population; and one way to improve statistical power is through the use of a larger sample (Field, 2013; Santiago-Roman, 2013). The larger the sample, the more representative the statistical analysis becomes of the population (Field,

2013). Therefore, the census size of $N = 387$ nascent entrepreneurs was not of great concern in this study since with a census the sample and population are the same (Field, 2013).

External Validity

External validity is the degree to which the researcher can conclude that the research results are applicable to a larger population (Creswell & Clark, 2011). Inferences can only be made if the researcher's sample of nascent entrepreneurs used in this study is representative of the larger population (Creswell & Clark, 2011). According to Reynolds et al. (2005), “the use of the individual case weights, developed for each country, ensured that the final aggregate indicators were representative of the adult population in each country” (p. 212). Therefore, inferences were likely to be made about the larger population from a representative sample of nascent entrepreneurs drawn from the GEM survey data. The external validity of the study is discussed further in Chapter V.

Institutional Review Board Approval

The researcher submitted the proposed study to The University of Southern Mississippi Institutional Review Board (IRB) for approval. See Appendix A for the correspondence for the Board's approval. The nascent entrepreneur data for analysis consisted of archival data from the GEM (2011) study. Since data from the GEM study is made available to the public 3 years after a data collection cycle, the researcher of the current study used data made available to the public in 2014 (Reynolds et al., 2005). All GEM reports and data for this study were readily accessible to the researcher via www.gemconsortium.org (Reynolds et al., 2005).

No animal or human subjects were used in this study (Santiago-Roman, 2013). Since no personal identification was available for GEM data points, the researcher did not collect, generate, or use data that needed protection by privacy, special storage, or consent from the participants (Santiago-Roman, 2013). The data release policy for the GEM is displayed in Appendix B.

Data Collection Procedure

According to Reynolds et al. (2005), the GEM study was designed to assess the part that entrepreneurship plays in economic growth. The idea for the GEM entrepreneurial study was developed in 1997 and has since expanded into over 80 countries including the United States (Lepoutre, Justo, Terjesen, & Bosma, 2013). The GEM survey is administered by companies with experience in conducting market research with a questionnaire that specifically captures data on entrepreneurship (Ramos-Rodríguez et al., 2012).

GEM researchers survey at least 2,000 randomly selected adults preferably between the ages of 18 and 99 years in the countries that participate in the survey (Bosma et al., 2012). However, if the researchers are not able to survey participants in the 18- to 99-year-old age group, then individual participants between the ages of 18 and 64 years are surveyed (Bosma et al., 2012). Contact methods for administering the survey are via landline phone, mobile phone, or interviews (Bosma et al., 2012). Where landline phone numbers are not available for > 85% of households, researchers contact participants via mobile phone or conduct personal interviews (Bosma et al., 2012).

The Total Early-Stage Entrepreneurial Activity (TEA) measure used by the GEM captures nascent entrepreneurs as well as data on recent start-ups less than 42 months

(Lepoutre et al., 2013). Participants that answer *yes* to being a nascent and young entrepreneur are counted only once towards the TEA measure (Lepoutre et al., 2013). Therefore, the TEA measure used by GEM to measure entrepreneurship is considered both valid and reliable (Lepoutre et al., 2013).

The GEM is regarded as the best data source on entrepreneurial activity in the world for comparative purposes and consists of a representative sample of adults by country (Lepoutre et al., 2013; Reynolds et al., 2005). The GEM study has also been used frequently in published academic research (Lepoutre et al., 2013; Ramos-Rodríguez et al., 2012). Thus, GEM data are the best available data sources used in a study on individual entrepreneur characteristics in the United States.

Instrument Review

The researcher did not collect original data for this study. Instead, data on nascent entrepreneurs came from archival data from the GEM Adult Population Survey for 2011. The primary purpose of the GEM's research initiative is to examine relationships between individual entrepreneurial activity and economic growth (Bosma et al., 2012). In keeping with that purpose, the GEM entrepreneur research program collects entrepreneur data annually (Reynolds et al., 2005). The GEM survey instrument used to collect data is peer-reviewed and used around the world for data on entrepreneurs. The GEM survey instrument is considered both reliable and relevant (Santiago-Roman, 2013).

The GEM Adult Population Survey is unique because it uses a survey constructed by experts in the field of entrepreneurship to measure entrepreneurship between countries around the world (Bosma et al., 2012). The GEM consortium includes 200 entrepreneurship experts that make sure the GEM project is relevant which enables

advancements in the survey instrument (Bosma et al., 2012). Each country has a National Survey Team that submits a survey proposal to the GEM Data Team for review before data collection begins in the respective country (Bosma et al., 2012). The National Team is required to conduct a pilot study if there is a new survey or new vendors used for the data collection process (Bosma et al., 2012). The National Team pilot surveys are then sent to the GEM Data Team for approval before further data are collected by the National Team (Bosma et al., 2012).

The GEM Data Team conducts a harmonization process of the data whereby entrepreneur data collected are cleaned, coded, and weighted for standardization across countries (Bosma et al., 2012). The GEM researchers use a weighted approach to reduce bias from varying response and sampling rates within the countries surveyed by GEM (Bosma et al., 2012). The goal of this weighted approach is for the sample distribution based on gender and age group to match the distribution for the population of adults in the same country based on gender and age group (Bosma et al., 2012). Comparisons are made between the sample and population distributions and a weight factor calculated which is then used to match the sample distribution to the population distribution (Bosma et al., 2012). A weighted approach is also required for survey designs that use strata (Bosma et al., 2012). For example, countries that use strata to separate by geographic locations would calculate weights by strata based on gender and age group combinations (Bosma et al., 2012).

The GEM data are cleaned for issues such as “patterns of missing data,” “skip logic patterns,” and “out of range values” (Bosma et al., 2012, p. 25). The data harmonization process includes combining the data into one file under the coding system

(Bosma et al., 2012). The GEM Adult Population Survey gathers statistical data on entrepreneurship appropriate for quantitative analysis. The data can be utilized in cross-country comparisons of entrepreneurship, examinations of entrepreneur activity, estimates of economic growth from entrepreneurship, and the establishment of entrepreneurship policies (Bosma et al., 2012; Reynolds et al., 2005) (see Table 1).

Table 1

Data Analysis Plan for the Sample of Nascent Entrepreneurs from the Global Entrepreneurship Monitor Adult Population 2011 Survey

Research Objective	Instrument	Data source	Variable	Scale	Statistical test
RO1	GEM Survey	GEM data	Age	Ordinal	Descriptive statistics
	GEM Survey	GEM data	Gender	Nominal	
	GEM Survey	GEM data	Education level	Ordinal	
	GEM Survey	GEM data	Knows other entrepreneurs	Nominal	
	GEM Survey	GEM data	Previous business angel Investor	Nominal	
RO2	GEM Survey	GEM data	Age	Ordinal	Chi-square test of independence
	GEM Survey	GEM data	Expected job growth	Nominal	

Table 1 (continued).

Research Objective	Instrument	Data source	Variable	Scale	Statistical test
RO3	GEM Survey	GEM data	Gender	Nominal	Chi-square test of independence
	GEM Survey	GEM data	Expected job growth	Nominal	
RO4	GEM Survey	GEM data	Education level	Ordinal	Chi-square test of independence
	GEM Survey	GEM data	Expected job growth	Nominal	
RO5	GEM Survey	GEM data	Knows other entrepreneurs	Nominal	Chi-square test of independence
	GEM Survey	GEM data	Expected job growth	Nominal	
RO6	GEM Survey	GEM data	Previous business angel investor	Nominal	Chi-square test of independence
	GEM Survey	GEM data	Expected job growth	Nominal	
RO7	GEM Survey	GEM data	Age	Ordinal	Logistic regression
	GEM Survey	GEM data	Gender	Nominal	
	GEM Survey	GEM data	Education level	Ordinal	
	GEM Survey	GEM data	Knows other entrepreneurs	Nominal	

Table 1 (continued).

Research Objective	Instrument	Data source	Variable	Scale	Statistical test
RO7	GEM Survey	GEM data	Previous business angel investor	Nominal	Logistic regression
	GEM Survey	GEM data	Expected job growth	Nominal	

In order to analyze the data for the study, the researcher first must prepare the data either by creating a new database or accessing existing data that have already been coded for analysis (Trochim, 2006). The researcher chose existing data from the GEM APS 2011. The existing GEM data were first downloaded from www.gemconsortium.org into a Microsoft Excel file. The downloaded GEM APS 2011 data had already been coded and documented by the GEM researchers along with GEM questionnaire used to collect the data (GEM, 2011). Next, the researcher examined the coded variables in the Microsoft Excel file in order to match each code with the relevant question on the GEM questionnaire that pertained to survey respondents in the nascent entrepreneur stage. The researcher then recoded the variables for analysis. The coded variables are identified in

Table 2

GEM 2011 Adult Population Survey Variable Coding

GEM variable code	Variable description	Recode name
AGE	Age in years	Age
GENDER	Gender (male/female)	Gender
UNEDUC	Education level	Education level
KNOWENT	Knows other entrepreneurs	Knows other entrepreneurs
BUSANG	Previous business angel investing experience	Previous business angel investor
SUYR5JOB-SUNOWJOB	Employees in 5 years-employees today	Expected job growth
SUWAGE	Business paid salaries or wages > 3 months	Nascent entrepreneur

The variable, expected job growth, used in this study is a dichotomous (*yes* or *no*) variable that represents either expected job growth or a lack of expected job growth and was used to examine the relationship with the other demographic, human capital, and social capital variables in RO2-RO6 (Santiago-Roman, 2013). The demographic variable of gender is dichotomous (male or female) and used with RO1 and RO3 (Santiago-Roman, 2013). The demographic variable of age is an ordinal variable measured in years and used with RO1-RO2 (Ramos-Rodríguez et al., 2012). The variable of education level for RO1 and RO4 is ordinal, whereby survey respondents are placed into the following categories based on GEM's use of the United Nations' education level categories: pre-

primary, some secondary, lower secondary, upper secondary, post-secondary, first stage of tertiary, second stage of tertiary, don't know, and refused (Bosma et al., 2012; Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013).

The variable for the social capital characteristic knows other entrepreneurs is a dichotomous (*Yes* or *No*) variable of relationships with entrepreneurs equal to 1 if the individual answered *yes* to personally knowing someone that started a business in the last 2 years and 0 if they answered *no* (Ramos-Rodríguez et al., 2012). The second variable for social capital characteristics is a previous business angel investor dichotomous variable equal to 1 if the individual answered *yes* to providing funds to help others start a business in the last 3 years and 0 if they answered *no* to this question (Ramos-Rodríguez et al., 2012).

Limitations

As with any research, limitations exist that may impact the results of the study (Roberts, 2010). The limitations of this research study included a reliance on third-party researchers that collected the data for the GEM Adult Population Survey (GEM APS) 2011 dataset. Population participants were limited to nascent entrepreneurs. The assumption that the participant responses were complete and honest was also made by the researcher. The researcher acknowledged that survey answers have the potential for self-reporting bias by the respondents.

Summary

The researcher used a cross-sectional nonexperimental research design to accomplish the seven research objectives of this study. Archival data were analyzed from the GEM APS 2011 entrepreneur dataset from the United States. In order to determine which variables of human capital or social capital are related to expected job growth, SPSS Software Version 23 was used to analyze the data for the study. The demographic characteristic variables included age and gender, the human capital characteristic variable included education level, and the social capital characteristic variables included knowing other entrepreneurs and previous business angel investing experience. The variable of expected job growth is dichotomous (*yes/no*) with a *yes* representing expected job growth and a *no* representing lack of expected job growth. Finally, the researcher obtained IRB approval for this study before conducting the analysis (see Appendix A). Chapter IV presents the analysis of the results of this research study.

CHAPTER IV – ANALYSIS OF DATA

The purpose of this study was to determine the relationship between the demographic characteristics of age and gender, the human capital characteristic of education level, and the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor that exist with nascent entrepreneurs and expected job growth in the United States. The data for this study included nascent entrepreneurs from the 2011 GEM Adult Population Survey in the United States. A total of $N = 387$ were identified as nascent entrepreneurs from the GEM Adult Population Survey for 2011 in the United States. All participants identified as nascent entrepreneurs ($N = 387$) were included in the data analysis to address the research objectives. This chapter provides the results of the quantitative data analysis for this study.

This research adds to the body of knowledge by providing a better understanding of the relationship between demographic, human, and social capital characteristics of nascent entrepreneurs and expected job growth in the United States. The study of entrepreneurship is both timely and relevant because of the potential to increase employment through entrepreneurial efforts and since almost two thirds of the jobs created in the United States dating back to the 1970s originated from small businesses (Goel et al., 2015; U.S. Small Business Administration, 2014). Additionally, the job loss brought about by the Great Recession of 2008 supports the need for studies on the development of programs created with the purpose of generating jobs through entrepreneurship (Santiago-Roman, 2013; Stiglitz, 2010).

Data Analysis Results

Research Objective One

Data analysis includes an examination of the data by the researcher to address the research objectives (Creswell & Clark, 2011). The first goal in analyzing the data was to summarize the data used in this study. Descriptive statistics are ideal to summarize research data (Trochim, 2006). The researcher used descriptive statistics to discover demographic, human, and social capital characteristics relevant to the research objectives of this research study (Santiago-Roman, 2013).

This research study included an analysis of the demographic characteristics of the census of nascent entrepreneurs from the 2011 GEM APS Survey. The researcher addressed Research Objective One by examining the demographic characteristics of the census in terms of the demographic characteristics of age and gender, the human capital characteristic of education level, and the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor as reported in the GEM. Specifically, in order to summarize the data the researcher used descriptive statistics and performed calculations for the frequency of respondents by category with the variables: age, gender, education level, knows other entrepreneurs, and previous business angel investor (Santiago-Roman, 2013).

Age. The largest age group for the census of nascent entrepreneurs was the age group 35-44 years (23.77%), followed by the 45-54 (22.74%) age group, 25-34 (21.19%), 55-64 (14.47%), 18-24 (10.08%), and 65 and older (6.20%). Demographic data was missing for some of the participants since some responded to the age question by stating they either don't know (1.29%) or refused to answer the question (0.26%). The

demographics for the census of nascent entrepreneurs in terms of age are presented in Table 3.

Table 3

Descriptive Statistics for United States Nascent Entrepreneur Respondents: Age

Age (years)	<i>f</i>	%
18-24	39	10.08
25-34	82	21.19
35-44	92	23.77
45-54	88	22.74
55-64	56	14.47
65 and older	24	6.20
Don't know	5	1.29
Refused	1	0.26
Total	387	100.00

Gender. The researcher then calculated the frequency for the gender of the nascent entrepreneur GEM survey respondents for Research Objective One. The census of nascent entrepreneurs consisted of 57.11% males and 42.89% females. The demographics of the census in terms of gender are presented in Table 4.

Table 4

*Descriptive Statistics of United States Nascent Entrepreneur Survey Respondents:**Gender*

Gender	<i>f</i>	%
Male	221	57.11
Female	166	42.89
Total	387	100.00

Education Level. The researchers that collected education data for the GEM 2011 APS Survey used the United Nations' International Standard Classification of Education (ISCED) from 1997 for educational level classification (Bosma et al., 2012; ISCED, 2011). The variable *education level* included the following categories as reported in the 2011 GEM APS Survey: pre-primary, some secondary, lower secondary, upper secondary, post-secondary, first stage of tertiary, second stage of tertiary, don't know, and refused (Bosma et al., 2012; Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013). The education levels from the ISCED reported in the GEM are similar to the following education levels in the United States: pre-primary level - kindergarten, some secondary - elementary, lower secondary - junior high, upper secondary - high school, post-secondary - community or vocational college, the first stage of tertiary - bachelor's or master's degree, and second stage tertiary - doctorate or professional degree (Miller et al., 2009). The researcher measured education level as an ordinal variable based on previous

research and categories found in the GEM survey (Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013). Frequency statistics for Research Objective One were calculated for the human capital characteristic of education level.

The largest education level group for the census of nascent entrepreneurs was the post-secondary group (27.60%), the first stage of tertiary education group (23.50%), the second stage of tertiary education group (19.10%), upper secondary (18.90%), lower secondary (7.00%), and pre-primary (1.80%). Demographic data for education level were missing for some of the participants since the participants refused to answer the question (2.10%). The demographics for the census in terms of the human capital characteristic of education level are presented in Table 5.

Knows Other Entrepreneurs. The variable for the social capital characteristic knows other entrepreneurs included the dichotomous variable of relationships with entrepreneurs equal to 1 if the individual answered *yes* to personally knowing someone that started a business in the last 2 years and 0 if they answered *no* to this question (Ramos-Rodríguez et al., 2012). The researcher calculated frequencies for the social capital characteristic, knows other entrepreneurs for Research Objective One. The census of nascent entrepreneurs consisted of 49.61% that know other entrepreneurs and 50.39% that did not know other entrepreneurs. The demographics of the census in terms of the responses to the social capital characteristic question for knowing another entrepreneur are presented in Table 6.

Table 5

Descriptive Statistics of United States Nascent Entrepreneur Survey Respondents:

Education Level

Education level	<i>f</i>	%
Pre-primary	7	1.80
Some secondary	0	.00
Lower secondary	27	7.00
Upper secondary	73	18.90
Post-secondary	107	27.60
First stage of tertiary	91	23.50
Second stage of tertiary	74	19.10
Refused	8	2.10
Total	387	100.00

Table 6

Descriptive Statistics of United States Nascent Entrepreneur Survey Respondents: Knows

Other Entrepreneurs

Knows other entrepreneurs	<i>f</i>	%
Yes	192	49.61
No	195	50.39
Total	387	100.00

Previous Business Angel Investor. The previous business angel investor variable is a dichotomous variable equal to 1 if the individual answered *yes* to providing funds to help others start a business in the last 3 years, and 0 if they answered *no* to this question (Ramos-Rodríguez et al., 2012). The researcher also calculated frequencies for the social capital characteristic of previous business angel investor for Research Objective One. The sample of nascent entrepreneurs consisted of 6.46% that had previous business angel investing experience and 93.54% that stated they did not. The demographics of the sample in terms of the responses to the previous business angel investing question are presented in Table 7.

Table 7

Descriptive Statistics of United States Nascent Entrepreneur Survey Respondents:

Previous Business Angel Investor

Previous business angel investor	<i>f</i>	%
Yes	25	6.46
No	362	93.54
Total	387	100.00

Research Objectives Two-Six

Research Objectives Two through Six in this study entailed statistical analysis to examine the relationship of the variables of age, gender, education level, knows entrepreneurs, and previous business angel investor with expected job growth. According to Field (2013), chi-square analysis is appropriate to analyze the relationship

between two categorical variables. The variable expected job growth for this study represents a *yes* for expected job growth and *no* for no expected job growth (Santiago-Roman, 2013). The chi-square test of independence is appropriate to test the relationship with expected job growth for the variable of gender for Research Objective Three, the variable knows other entrepreneurs for Research Objective Five, and previous business angel investor for Research Objective Six of this study. The chi-square test of independence is appropriate to test the relationship with expected job growth and the variables age for Research Objective Two and education level for Research Objective Four of this study.

The dichotomous (*yes* or *no*) variable expected job growth, represented a *yes* for "expect to increase the number of jobs in 5 years" and *no* for a "lack of job growth" (Santiago-Roman, 2013, p. 15). According to Phillips (2005), job growth is calculated by determining the net gain in jobs, which accounts for those jobs that are eliminated, automated, or outsourced in an organization (Phillips, 2005). However, this calculation of job growth as discussed by Phillips (2005) is not the best formula to calculate job growth from the GEM data on entrepreneurs since the data on jobs outsourced or automated are not captured by the survey instrument.

One additional way to measure job growth from the GEM dataset is to include the change in expected employment for nascent entrepreneurs, new businesses, or established firms (Santiago-Roman, 2013). However, this combined measurement of job growth for entrepreneurs at different stages fails to isolate the expected job growth for nascent entrepreneurs in the analysis. Therefore, the measurement for the variable, expected job

growth, was based on the difference in the expected and current number of employees for nascent entrepreneurs in the GEM APS 2011 Survey (Santiago-Roman, 2013).

The variable, expected job growth, was computed by calculating the difference of the value of the variables, “suyr5job-sunojob” from the GEM APS 2011 survey (Santiago-Roman, 2013, p. 77). The variable, "suyr5job," from the GEM survey represents the number of individuals expected to be employed by a nascent business in 5 years, and the variable, “sunojob,” represents individuals that are currently employed by a nascent business (Santiago-Roman, 2013, p. 77). Next, if “job growth ≤ 0 ”, then “the expectation of increasing the number of jobs in 5 years = no” (Santiago-Roman, 2013, p. 77). However, if “job growth ≥ 1 ,” then “the expectation of increasing the number of jobs in 5 years = yes” (Santiago-Roman, 2013, p. 77).

The researcher then described the results of the calculation for the expected job growth variable to get a better indication of those nascent entrepreneurs that expected an increase, decrease, or no change in the number of employees in 5 years. A total of 303 nascent entrepreneurs expected to increase the number of employees in 5 years, 27 expected no job growth, and 57 expected negative job growth. The descriptive results of the calculation of the expected job growth variable are displayed in Table 8.

Table 8

Expected Job Growth Variable Descriptive Results for the Census of Nascent

Entrepreneurs as Reported in the 2011 GEM APS Survey

Positive growth	No growth	Negative Growth	Total
303	27	57	387

The researcher used the variables, age and expected job growth, to test the relationship for RO2. Ramos-Rodríguez et al. (2012) used data from the GEM to measure the variable of age in years and calculated an average age for the survey respondents. However, previous research suggested that younger individuals are more likely to start businesses (Ramos-Rodríguez et al., 2012; Santiago-Roman, 2013). Therefore, in order to better illustrate the possible relationship of those in younger age brackets with expected job growth, the researcher analyzed age as an ordinal variable based on the age categories in the GEM Survey (Santiago-Roman, 2013).

The researcher used the chi-square test for independence to analyze the nascent entrepreneur data from the 2011 GEM APS for Research Objectives Two through Six. The chi-square test for independence is a non-parametric statistical test appropriate for analyzing the linear relationship between two categorical variables (Field, 2013). In order for the chi-square test statistic to be accurate, the expected frequencies for each cell must be greater than 5 (Field, 2013). Therefore, a Fisher's Exact Test is more appropriate to use when the expected frequencies for each cell are less than 5 for contingency tables

that represent the cross tabulation of two variables, and the likelihood ratio statistic is more appropriate for contingency tables that represent cross tabulation of more than two variables (Field, 2013).

The researcher used the phi statistic to measure the association strength for the contingency tables that represent the cross tabulation of two variables (Field, 2013; Santiago-Roman, 2013). However, the researcher used Cramer's V statistic to measure association strength for the variables with contingency tables that represent the cross tabulation of more than two variables (Field, 2013; Santiago-Roman, 2013). An $\alpha = .05$ was used by the researcher to test Research Objectives Two through Six. According to Field (2013), $\alpha = .05$ is acceptable since the researcher has a 5% probability of realizing a result by chance and can be confident that the result is real.

Research Objective Two

The results of the chi-square analysis for Research Objective Two indicated that there is not a statistically significant relationship between age and expected job growth, $\chi^2 (5) = 6.531, p = .258$. Therefore, the demographic characteristic of age is not associated with expected job growth. The results of the chi-square analysis for the demographic characteristic age and expected job growth are reported in Tables 9 and 10.

Table 9

Cross Tabulation of the Demographic Characteristic of Age: Research Objective 2

Age (years)		Expected job growth		Total
		Yes	No	
18-24	Count	31.0	8.0	39.0
	Expected count	30.6	8.4	39.0
	Residual	.4	-.4	
	Standard residual	.1	.1	
25-34	Count	67.0	15.0	82.0
	Expected count	64.4	17.6	82.0
	Residual	2.6	- 2.6	
	Standard residual	.3	- .6	
35-44	Count	68.0	24.0	92.0
	Expected count	72.2	19.8	92.0
	Residual	-4.2	4.2	
	Standard residual	-.5	.9	
45-54	Count	71.0	17.0	88.0
	Expected count	69.1	18.9	88.0
	Residual	1.9	-1.9	
	Standard residual	.2	-.4	
55-64	Count	47.0	9.0	56.0
	Expected count	43.9	12.1	56.0
	Residual	3.1	-3.1	
	Standard residual	.5	-.9	
65 and older	Count	15.0	9.0	24.0
	Expected count	18.8	5.2	24.0
	Residual	-3.8	3.8	
	Standard residual	-.9	1.7	
Total	Count	299.0	82.0	381.0
	Expected count	299.0	82.0	381.0

Table 10

*Results of Pearson Chi Square for the Demographic Characteristic of Age: Research**Objective 2*

Test	Value	df	Sig.
Pearson χ^2	6.531 ^a	5	.258
N of valid cases	381		

^a0 cells (0.0%) have expected count < 5. The minimum expected count is 5.17.

Research Objective Three

The variable of gender corresponds to RO3 to determine the relationship between the descriptive variable of gender and expected job growth for nascent entrepreneurs.

The dichotomous variable of gender took the value of 0 for males and 1 for females in previous studies using GEM data (Ramos-Rodríguez et al., 2012). Therefore, the researcher analyzed gender as a dichotomous variable with the value of 0 for males and 1 for females in this study (Ramos-Rodríguez et al., 2012).

The results of the chi-square analysis indicated that there is not a statistically significant relationship between gender (male/female) and expected job growth $\chi^2(1) = 3.97, p = .529$. The demographic characteristic of gender was not associated with expected job growth. The results of the chi-square analysis are reported in Tables 11 and 12.

Table 11

Cross-tabulation of the Demographic Characteristic of Gender: Research Objective 3

Gender		Expected job growth		Total
		Yes	No	
Male	Count	175.0	46.0	221.0
	Expected count	172.5	48.5	221.0
	Residual	2.5	-2.5	
	Standard residual	.2	-.4	
Female	Count	127.0	39.0	166.0
	Expected count	129.5	36.5	166.0
	Residual	-2.5	2.5	
	Standard residual	-.2	.4	
Total	Count	302.0	85.0	387.0
	Expected count	302.0	85.0	387.0

Table 12

Results of Pearson Chi-Square for the Demographic Characteristic of Gender: Research Objective 3

Test	Value	df	Sig.
Pearson χ^2	3.97 ^a	1	.529
N of valid cases	387		

^a0 cells (0.0%) have expected count < 5. The minimum expected count is 36.46.

Research Objective Four

The results of the chi-square analysis indicated that there was not a statistically significant relationship between the human capital characteristic of education level and expected job growth $\chi^2(5) = 7.586, p = .181$. However, the chi-square analysis found that one cell had an expected count < 5 , which indicated that the likelihood ratio is more appropriate to analyze the relationship between education level and expected job growth. The likelihood ratio statistic was also not statistically significant with $LR(5) = 9.114, p = .105$. Therefore, the human capital characteristic of education level was not associated with expected job growth. The results of the chi-square analysis are reported in Tables 13 and 14.

Table 13

Cross-Tabulation of the Human Capital Characteristic of Education Level: Research Objective 4

Education level		Expected job growth		Total
		Yes	No	
Pre-primary	Count	7.0	0.0	7.0
	Expected count	5.5	1.5	7.0
	Residual	1.5	-1.5	
	Standard residual	.7	-1.2	
Lower secondary	Count	20.0	7.0	27.0
	Expected count	21.1	5.9	27.0
	Residual	-1.1	1.1	
	Standard residual	-.2	.4	
Upper secondary	Count	59.0	14.0	73.0
	Expected count	57.0	16.0	73.0

Table 13 (continued).

		Expected job growth		Total
		Yes	No	
Upper secondary	Residual	2.0	-2.0	
	Standard residual	.3	-.5	
Post secondary	Count	90.0	17.0	107.0
	Expected count	83.6	23.4	107.0
	Residual	6.4	-6.4	
	Standard residual	.7	-1.3	
First Stage Tertiary	Count	66.0	25.0	91.0
	Expected count	71.1	19.9	91.0
	Residual	-5.1	5.1	
	Standard residual	-.6	1.1	
Second Stage Tertiary	Count	54.0	20.0	74.0
	Expected count	57.8	16.2	74.0
	Residual	-3.8	3.8	
	Standard residual	-.5	.9	
Total	Count	296.0	83.0	379.0
	Expected count	296.0	83.0	379.0

Table 14

Results of Pearson Chi Square for the Demographic Characteristic of Education Level:

Research Objective 4

Test	Value	df	Sig.
Pearson χ^2	7.586 ^a	5	.181

Table 14 (continued).

Test	Value	df	Sig.
Likelihood ratio	9.114	5	.105
N of valid cases	379		

^a1 cells (8.3%) have expected count < 5. The minimum expected count is 1.53.

Research Objective Five

The results of the chi-square analysis indicated that there was not a statistically significant relationship between the social capital characteristic of knowing other entrepreneurs and expected job growth, $\chi^2(1) = 2.813$, $p = .094$. The social capital characteristic of knowing other entrepreneurs was not associated with expected job growth. The results of the chi-square analysis are reported in Tables 15 and 16.

Table 15

Cross-Tabulation of the Social Capital Characteristic of Knows Other Entrepreneurs:

Research Objective Five

		Expected job growth		Total
		Yes	No	
Yes	Count	143.0	49.0	192.0
	Expected count	149.8	42.2	192.0
	Residual	-6.8	6.8	
	Standard residual	-.6	1.1	
No	Count	159.0	36.0	195.0
	Expected count	152.2	42.8	195.0

Table 15 (continued).

Knows Other Entrepreneurs		Expected job growth		Total
		Yes	No	
	Residual	6.8	-6.8	
	Standard residual	.6	-1.0	
Total	Count	302.0	85.0	387.0
	Expected count	302.0	85.0	387.0

Table 16

*Results of Pearson Chi Square for the Social Capital Characteristic of Knows Other
Entrepreneurs: Research Objective 5*

Test	Value	df	Sig.
Pearson χ^2	2.813 ^a	1	.094
N of valid cases	387.000		

^a0 cells (0.0%) have expected count < 5. The minimum expected count is 42.17.

Research Objective Six

The results of the chi-square analysis indicate that there was not a statistically significant relationship between being a previous business angel investor and expected job growth, $\chi^2(1) = .065$, $p = .799$. Therefore, the social capital characteristic of being a previous business angel investor was not associated with expected job growth. The results of the chi-square analysis are reported in Tables 17 and 18.

Table 17

*Cross-Tabulation of the Social Capital Characteristic of Previous Business Angel**Investor: Research Objective 6*

Previous Business Angel Investor		Expected job growth		Total
		Yes	No	
Yes	Count	19.0	6.0	25.0
	Expected count	19.5	5.5	25.0
	Residual	-.5.0	.5	
	Standard residual	-.1	.2	
No	Count	283.0	79.0	362.0
	Expected count	282.5	79.5	362.0
	Residual	.5	-.5	
	Standard residual	0.0	-.1	
Total	Count	302.0	85.0	387.0
	Expected count	302.0	85.0	387.0

Table 18

*Results of Pearson Chi-Square for the Social Capital Characteristics of Previous**Business Angel Investor: Research Objective 6*

Test	Value	df	Sig.
Pearson X^2	.065 ^a	1	.799
No. of valid cases	387		

a 0 cells (0.0%) have expected count < 5. The minimum expected count is 5.49.

Research Objective Seven

In addition to determining the relationship of the nascent entrepreneur characteristics with expected job growth, the researcher sought to construct a model to determine the influence that the characteristics have on expected job growth in the United States as reported in the GEM (Santiago-Roman, 2013). The next step was to test the influence that the independent variables of age, gender, education level, knows other entrepreneurs, and previous business angel investor had on the dichotomous dependent variable of expected job growth. The dependent variable, expected job growth, is a dichotomous (*yes* or *no*) variable that represents either expected job growth or a lack of expected job growth (Santiago-Roman, 2013). Binary logistic regression is appropriate when the dependent variable has two outcomes (Field, 2013). Therefore, the researcher tested the influence that the independent variables had on the dependent variable of expected job growth with binary logistic regression.

Research Objective Seven in this study entailed an analysis with a dichotomous (Yes/No) dependent variable of expected job growth. This test of the effects of the independent variables on the dichotomous dependent variable required the use of binary logistic regression (Field, 2013). The regression equation for this study was illustrated by the following:

$$Y = a + b_1 * \text{age} + b_2 * \text{gender} + b_3 * \text{education level} + b_4 * \text{KnowEntr} + b_5 * \text{BusAng}$$

Where Y = Expected Job Growth (Yes/No)

a = constant

X1 = age

X2 = gender

X3 = Education Level

X4 = KnowEntr (Knows other entrepreneurs)

X5 = BusAng (Previous business angel investor)

The coefficient b1 corresponds to the independent variable of age to determine the effect that the demographic characteristic of age had on expected job growth. The coefficient b2 corresponds to the independent variable of gender to determine the effect that demographic characteristic of gender had on expected job growth. The coefficient b3 corresponds to the independent variable of education level to determine the effect that human capital characteristic of education level had on expected job growth. The coefficient b4 corresponds to the independent variable of knows other entrepreneurs to determine the effect that the social capital characteristic of knows other entrepreneurs had on expected job growth. The coefficient b5 corresponds to the independent variable of previous business angel investor to determine the effect that the social capital characteristic of being a previous business angel investor had on expected job growth.

The researcher first conducted tests to determine model significance, fit, and multicollinearity. Specifically, the researcher used a model chi-square statistic to determine if the new model that includes the explanatory variables was better than the baseline model, and a Hosmer-Lemeshow goodness-of-fit statistic was performed by the researcher to determine model fit (Field, 2013). The results of the model chi-square and Hosmer-Lemeshow goodness-of-fit tests are presented in Tables 19 and 20.

Table 19

Omnibus Tests of Model Coefficients

		χ^2	<i>df</i>	Sig.
Step 1	Step	21.488	15	.122
	Block	21.488	15	.122
	Model	21.488	15	.122

Table 20

Hosmer-Lemeshow Goodness of Fit

Step	χ^2	<i>df</i>	Sig.
1	9.077	8	.336

The omnibus tests of model coefficients were not statistically significant $\chi^2 (15) = 21.488, p = .122$. This result indicated that predictors together in the model did not consistently distinguish between the nascent entrepreneurs that expected to increase the number of employees in 5 years and those that did not (Field, 2013; Santiago-Roman, 2013). The Hosmer-Lemeshow goodness-of-fit test statistic was not statistically significant $\chi^2 (8) = 9.077, p = .336$. Therefore, the result of the Hosmer-Lemeshow test indicated that the model was a good fit to the data (Field, 2013).

Next, a Nagelkerke R^2 statistic was calculated to determine the relationship strength between the predictor variables and the outcome variable of expected job growth

(Field, 2013). The Nagelkerke R^2 statistic is an approximation of the total variation that the model accounts for and has values from 0 to 1 (Field, 2013). A Nagelkerke R^2 value of .083 indicated that the model explained approximately 8% of the variation in the outcome variable expected job growth. Results for the model summary of the Nagelkerke R^2 test are presented in Table 21.

Table 21

Model Summary

Step	-2 Likelihood	Cox and Snell R^2	Nagelkerke R^2
1	385.984	.054	.083

Multicollinearity is present when there is a correlation between two or more of the predictors in the model (Field, 2013). Multicollinearity is a problem since it becomes difficult to determine the importance of an individual predictor to the model (Field, 2013). Therefore, the researcher performed collinearity diagnostics with tolerance statistics and variance inflation factors (VIF) in SPSS on the predictors to determine the presence of multicollinearity (Santiago-Roman, 2013). Tolerance statistics close to zero or $VIF > 2$ suggested the presence of multicollinearity (Santiago-Roman, 2013). The results of the collinearity diagnostics results are presented in Table 22.

Table 22

Collinearity Diagnostics

Predictors	B	SE	<i>t</i>	Sig.	95% CI		Tolerance	VIF
					Lower	Upper		
(Constant)	.029	.094	9.834	.000	.743	1.115		
Age	-.001	.015	-.077	.939	-.031	.028	.967	1.034
Gender	-.028	.043	-.652	.515	-.012	.056	.984	1.016
Education level	-.017	.013	-1.248	.618	-.043	.010	.983	1.018
Knows entrepreneurs	-.071	.042	-1.669	.162	-.154	.013	.989	1.012
Previous business angel investor	-.014	.086	-.158	.874	-.183	.156	.992	1.008

The results of the collinearity diagnostics did not indicate the existence of multicollinearity for the predictor age with a tolerance of .967 and VIF = 1.034. Similar results were found for gender with a tolerance of .984 and VIF = 1.016. The diagnostics for the human capital characteristic of education level found a tolerance of .983 and VIF = 1.018. The social capital characteristic of knows other entrepreneurs had a tolerance of .989 and VIF = 1.012, and the predictor of previous business angel investor had a tolerance of .992 and VIF = 1.008. Therefore, the results indicated that there was not a correlation between two or more predictors in the model.

After the researcher first conducted tests of model significance, fit, and multicollinearity, a logistic regression analysis was performed to test Research Objective Seven. Logistic regression analysis of the GEM nascent entrepreneur data was performed to determine the influence of the predictor variables (age, gender, education level, knows other entrepreneurs, previous business angel investor) had on expected job growth. The results of the logistic regression analysis is presented in Table 23.

Table 23

Summary of Logistic Regression Analysis for Determining the Influence that Specific Demographic, Human Capital, and Social Capital Characteristics^a have on Expected Job Growth for Nascent Entrepreneurs as Reported in the GEM

Predictor variables	B	S.E. B	Wald	Sig.	Exp(B)
Age (years)			9.055	.171	
18 to 24	-.299	.965	.096	.756	.741
25 to 34	.840	.609	1.904	.168	2.317
35 to 44	1.093	.527	4.302	.038	2.985
45 to 54	.541	.497	1.185	.276	1.718
55 to 64	.990	.516	3.683	.055	2.691
65 and older	1.262	.574	4.831	.028	3.533
Gender	-.236	.259	.828	.363	.790
Education			5.891	.435	
Level					
Pre-primary	.140	.878	.025	.873	1.150
Lower secondary	20.142	15068.211	.000	.999	59161678.043
Upper secondary	.044	.531	.007	.933	1.045
Post-secondary	.307	.424	.524	.469	1.359

Table 23 (continued).

Predictor variables	<i>B</i>	S.E. B	Wald	Sig.	Exp(B)
First part of Tertiary	.698	.384	3.298	.069	2.010
Second part of Tertiary	-.120	.367	.106	.744	.887
Previous business angel investor	.031	.511	.004	.951	1.032
Knows other Entrepreneurs	-.427	.259	2.727	.099	.652
Constant	.783	.630	1.545	.214	2.188

Note. df = 1.

^aDemographic characteristics included age and gender, human capital characteristics of education level, and the social capital characteristics of knows other entrepreneurs and previous business angel investor.

A Wald statistic assesses the contribution of the predictor variables to the model (Field, 2013). Specifically, the Wald statistic “tells us whether the b coefficient is significantly different from zero” (Field, 2013, p. 766). Coefficients that are statistically different from zero indicate that the predictor significantly contributes to the outcome (Field, 2013). In this case, the outcome being expected job growth.

The researcher first examined the Wald statistic results from the regression analysis. The Wald statistic for following predictors in the model (gender, education level, knows other entrepreneurs, and previous business angel investor) did not indicate that the predictors were statistically different from zero. The Wald statistic was significant for only two of the age groups. Specifically, the Wald statistic was significant

for the age groups 35-44 years ($p = .038$) and 65 years and older ($p = .028$). The Wald statistic for gender was not significant ($p = .363$) and did not make a significant contribution to the prediction of expected job growth. The Wald statistics for the social capital characteristics of knows other entrepreneurs ($p = .099$) and previous business angel investor ($p = .951$) were not significant and did not make significant contributions to the prediction of expected job growth. The Wald statistic was not significant for the following age groups: 18-24 years ($p = .756$), 25-34 years ($p = .168$), 45-54 years ($p = .276$), and 55-64 years ($p = .055$). The Wald statistic for the human capital characteristic education level was not significant for all education groups: Pre-primary ($p = .873$), Lower Secondary ($p = .999$), Upper Secondary ($p = .933$), Post-secondary ($p = .469$), First stage of tertiary ($p = .069$), and Second stage of tertiary ($p = .744$).

In addition to Wald statistics analysis, the researcher performed an analysis of the OR for the variables with a significant Wald result. The OR is important for interpretation of logistic regression results (Field, 2013). Specifically, the OR, expressed as Exp (B) , indicates the change in the odds from a unit change in the predictor (Field, 2013). According to Field (2013), if the OR Exp (B) is > 1 , then as the predictor increases the odds of the outcome increases. In this study, as the predictor or predictors increase, the expected job growth outcome increases. Likewise, if the OR Exp (B) is < 1 , then as the predictor decreases the odds of the expected job growth outcome decreases (Field, 2013). For the nascent entrepreneurs that were in the age group 35-44, the OR results indicated that the odds were 2.985 times higher to be in the expected job growth group $\text{Exp (B)} = 2.985$. The OR results for the age group 65 and older was $\text{Exp (B)} =$

3.533 which indicated the odds were 3.533 times higher to be in the expected job growth group.

The Hauck-Donner phenomenon occurs when there is a very large effect, which means the existence of complete or quasi-complete separation, thus indicative of an inaccurate Wald statistic (Allison, 2008; Santiago-Roman, 2013). The results of the logistic regression analysis for the lower secondary education level group resulted in extreme values for S.E., Wald, and Exp(B) which are indicative of the Hauck-Donner phenomenon (Santiago-Roman, 2013). One option to address the separation issue is to delete the variable from the model (Allison, 2008; Heinze and Schemper, 2002). However, the deletion of the variable from the regression model might lead to biased estimates for the remaining variables in the model (Allison, 2008). The researcher chose to include the education level variable in the model in order to reduce the risk of producing biased estimates for the remaining variables.

Summary

This chapter provided the results of the quantitative analyses for this study. Research Objective 1 analyzed the descriptive statistics for the census of nascent entrepreneurs from the GEM APS 2011 data in the United States. The demographic characteristics of the nascent entrepreneurs in this study for gender was male (57.11%) and for age primarily ages 35-44 (23.77%). Human capital characteristics for the nascent entrepreneurs in the study were characterized as having obtained an education level of a bachelor's degree or higher (42.64%). The descriptive analysis of the social capital characteristics for nascent entrepreneurs indicated that almost half reported knowing

another entrepreneur (49.61%). However, only 6.46% reported having previous business angel investing experience.

The chi-square analyses for Research Objectives 2 and 3 indicated that a significant relationship does not exist between the demographic characteristics of age or gender and expected job growth. Similarly, the results of the chi-square analyses for Research Objectives 4 to 6 for the relationship between the human capital characteristic of education level or the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor, and expected job growth were not significant.

The Wald statistic for predictors in the model indicated that the age groups 35-44 and 65 and older were statistically different from zero. The OR results indicated that the odds were 2.985 times higher to be in the expected job growth group $\text{Exp (B)} = 2.985$ for those nascent entrepreneurs in the 35-44 age group. The OR results for the age group 65 and older was $\text{Exp (B)} = 3.533$ which indicated the odds were 3.533 times higher to be in the expected job growth group. Chapter V discusses the research findings, conclusions, limitations of the study, and recommendations for future research.

CHAPTER V – SUMMARY

The previous chapters discussed the relationship between the demographic, human, and social capital characteristics of nascent entrepreneurs and expected job growth in the United States. This chapter discusses the research findings, conclusions, and recommendations. In this chapter, the researcher proposes opportunities for future research studies on the relationship between the demographic, human, and social capital characteristics of entrepreneurs and expected job growth.

Findings, Conclusions, Recommendations

The researcher analyzed the demographic characteristics of the census of nascent entrepreneurs. The findings from the descriptive analysis provided insight into the age and gender of the nascent entrepreneurs. The descriptive analysis also described educational attainment along with the social capital of the census of entrepreneurs.

Demographic Characteristics

Findings. The descriptive analysis of age for Research Objective One found that the nascent entrepreneurs in the study were predominantly in the 35-44 age group (23.77%), with the 45-54 age group (22.74%) a close second. A descriptive analysis of gender found that the nascent entrepreneurs in this study were primarily males (57.11%). The descriptive analysis also found that a large portion of the census of nascent entrepreneurs were college-educated with the first stage of tertiary education group (23.50%) and the second stage of tertiary education group (19.10%). The social capital characteristics of the nascent entrepreneurs in this study included about half (49.61%) that stated they knew another entrepreneur, but very few (6.46%) had previous business angel investing experience.

Conclusions. The findings from the descriptive analysis were similar to previous studies that found entrepreneurs likely to be < 45 years of age with the 35-44 age group (23.77%) being the largest age group (Brixy et al., 2012; Kautonen et al., 2014; Neira et al., 2013; Rocha et al., 2015). The finding of the descriptive analysis for gender was similar to previous studies that males are more likely to become entrepreneurs (Lazear, 2005; Rocha et al., 2015; Tinuke, 2013; Van der Zwan et al., 2012). The education level of the nascent entrepreneurs in this study was similar to previous studies that found a positive relationship between education and entrepreneurship (Arenius & Minniti, 2005; Rocha et al., 2015). Similarly, other studies suggested that knowing other entrepreneurs provided a role model to start a new business and, from a social capital perspective, was likely to provide the entrepreneur with higher quality information and resources and guide relationships with financial institutions (Ramos-Rodríguez et al., 2012).

Recommendations. In this study, the census of nascent entrepreneurs was characterized as predominantly male. Therefore, the researcher recommends that there is an opportunity for development of entrepreneurship training programs designed to provide more women with training and education to become entrepreneurs. The highest percentage of nascent entrepreneurs in this study were in the 35-44 age group. The researcher recommends development efforts concentrated on nascent entrepreneurs in the 35-44 age group. The nascent entrepreneur census was also college educated with the first stage of tertiary education group (23.50%) and the second stage of tertiary education group (19.10%). The researcher also recommends considering the education level of nascent entrepreneurs before providing them with further training and development.

Relationship Between Demographic, Human Capital, and Social Capital Characteristics

Findings. The results of the chi-square statistical analysis found no statistically significant relationship between the demographic characteristics of age or gender and expected job growth. The relationship between the human capital characteristic of education level and expected job growth was not statistically significant. The relationship between the social capital variables knows other entrepreneurs or previous business angel investor and expected job growth was not statistically significant.

Conclusions. No significant relationship was found between the demographic variables of age or gender and expected job growth which is similar to previous findings in entrepreneurial research (Santiago-Roman, 2013). The relationship between the human capital characteristic of education level and expected job growth was not significant even though previous research indicates that entrepreneurs with higher levels of education expect to grow their businesses (Santiago-Roman, 2013). Almost half of the census of nascent entrepreneurs knew another entrepreneur even though there was not a significant relationship between social capital and expected job growth. The previous research by Santiago-Roman (2013) did not examine the relationship of social capital with expected job growth even though social capital resources are important to help reduce business uncertainties, transfer information, and grow the business (Ramos-Rodríguez et al., 2012).

Recommendations. The researcher recommends further examination of the relationship between education level and expected job growth since previous research indicates that entrepreneurs with higher levels of education expect to grow their businesses (Santiago-Roman, 2013). Even though no significant relationship was found

between social capital and expected job growth in this study, the social capital embedded in network relationships is important to entrepreneurs to reducing uncertainties and enabling the entrepreneur to grow the business (Ramos-Rodríguez et al., 2012). The researcher recommends further examination of the relationship between social capital and expected job growth.

Predictor Variables for Expected Job Growth

Findings. The researcher performed logistic regression analysis on the GEM nascent entrepreneur data to determine the influence the predictor variables (age, gender, education level, knows other entrepreneurs, and previous business angel investor) had on expected job growth. The predictor variables for human capital, social capital, and gender were not significant predictors of expected job growth for the census of nascent entrepreneurs in the 2011 GEM APS Survey. However, the age groups 35-44 years ($p = .038$) and 65 years and older ($p = .028$) were significant, which indicated that the predictors were statistically different from zero at the $p = .05$ level.

Conclusions. Similar to the findings of Santiago-Roman (2013), gender and education were not significant influencers of expected job growth. Social capital characteristics did not significantly influence the outcome, but almost half (49.61%) indicated they knew another entrepreneur. This study found that the predictors for the age groups 35-44 and 65 years and older significantly influenced the expected job growth outcome. This finding is similar to previous research that found entrepreneurs in the age group 35-44 significantly predicted expected job growth for a sample of Puerto Rican entrepreneurs (Santiago-Roman, 2013).

Recommendations. The researcher recommends policymakers and educators target nascent entrepreneurs ages 35-44 and 65 and older for entrepreneur training and development programs. This recommendation is based on the finding that both age groups were found to significantly influence expected job growth. By supporting the entrepreneur development for nascent entrepreneurs ages 35-44 and 65 years and older, policymakers and educators have a better opportunity to see nascent entrepreneurs in these two age groups hire more employees and grow the economy.

Recommendations for Future Research

To expand the body of knowledge in entrepreneurship research and develop a better understanding of the relationship between the human and social capital of nascent entrepreneurs and potential job creation, future research should expand on the present study by examining this relationship for nascent entrepreneurs in other countries. Since this study limited the analysis to nascent entrepreneurs, future research can include an examination of data for established entrepreneurs. The findings for established entrepreneurs can then be compared with the research findings from the present study on nascent entrepreneurs to reconcile any differences. Further cross-country comparisons can be made to expand on the data analysis conducted on nascent entrepreneurs from the United States in this study. The researcher acknowledges other factors such as: the type of opportunity (necessity vs. opportunity), motives, the business sector, startup costs, and previous business experience that possibly influences entrepreneurship and expected job growth (Santiago-Roman, 2013). Therefore, the researcher also recommends adding an additional business sector predictor to the current regression model to determine if the

business sector is a statistically significant influencer of expected job growth in the United States (Santiago-Roman, 2013).

Summary

This study examined the relationship between the demographic characteristics of age and gender, the human capital characteristic of education level, and the social capital characteristics of knowing other entrepreneurs and being a previous business angel investor that exist with nascent entrepreneurs and expected job growth in the United States. The results of this study are relevant for both research and practical application. This study adds to the body of knowledge first with an examination of nascent entrepreneur characteristics and then with an examination of the relationship with those characteristics and expected job growth in the United States.

The descriptive analysis revealed that nascent entrepreneurs are primarily characterized as men. The largest portion of nascent entrepreneurs in this study was in the 35-44 age group. The human capital characteristic of education level shows the census of nascent entrepreneurs is for the most part college educated. Social capital characteristics included almost half of the nascent entrepreneurs in the census data that knew another entrepreneur, but only a small percent that had previous business angel investing experience.

The findings in this study suggest several implications for the design of training programs that provide increased opportunities in the United States through entrepreneurship. First, while education level was not a significant influencer of expected job growth, a large part of the census was college educated. Program administrators should take education level into consideration when designing

entrepreneurial training. Second, there is an opportunity to design entrepreneurial training programs to encourage female entrepreneurship. Finally, entrepreneurship training programs should be targeted at nascent entrepreneurs in the 35-44 and 65 older age groups, since these age groups were found to significantly influence the expected job growth outcome.

If policymakers and educators want to design more effective training and education infrastructure to support entrepreneur development, generate jobs, and grow the economy, the relationships identified between the human and social capital characteristics and demonstrated job growth relative to becoming a successful entrepreneur in this study should guide program development. The results of this study indicated that policymakers and educators should consider entrepreneur education and training program development targeted at nascent entrepreneurs ages 35-44 and 65 and older. Targeted training and education infrastructure design efforts by policymakers and educators based on the findings in this study can more efficiently support entrepreneur development. The targeted efforts can look at increased learning outcomes from training as measured by entrepreneur skills assessment and application, thereby generating jobs through entrepreneurship and growing the economy.

APPENDIX A – GEM Data Release

Table A1.

Data Sharing and Public Domain Release Schedule Policy

	Unit of Analysis	Year of Data Collection	Global Press Release	Up to one year following	One to 2 years following	Two to 3 years following	3 years following and beyond
Months after Press Release			0	0 to 12	13 to 24	25 to 36	37 and up
Country Adult Pop	Representative Adults each country	Each GEM National Team		Each GEM National Team	All GEM Teams	All GEM Teams	Public Domain
Consolidated Adult Pop	Representative Adults for all countries	GEM Coordination, Special Topic Teams, Unilateral Sharing		GEM Coordination, Special Topic Teams, Unilateral Sharing	All GEM Teams	All GEM Teams	Public Domain
Individual Expert Questionnaire Interview	National Expert for each country	Each GEM National Team		Each GEM National Team	All GEM Teams	All GEM Teams	Public Domain
Consolidated Expert Questionnaire	National Experts for all countries	GEM Coordination, Special Topic Teams, Unilateral Sharing		GEM Coordination, Special Topic Teams, Unilateral Sharing	All GEM Teams	All GEM Teams	Public Domain

	Unit of Analysis	Year of Data Collection	Global Press Release	Up to one year following	One to 2 years following	Two to 3 years following	3 years following and beyond
Individual Expert F/F Interview	National Experts for each country	Each GEM National Team		Each GEM National Team	All GEM Teams	All GEM Teams	Public Domain
Consolidated Expert F/F Interview	National Experts for all countries	GEM Coordination, Special Topic Teams, Unilateral Sharing		GEM Coordination, Special Topic Teams, Unilateral Sharing	All GEM Teams	All GEM Teams	Public Domain
Master Data Set	GEM Country	All GEM Teams		All GEM Teams	All GEM Teams	All GEM Teams	Public Domain

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